ITT Telecom
Network Systems Division

SPECIAL SERVICE CHANNEL UNITS

OPTION SELECTION AND INSTALLATION

1. GENERAL

1.001 This addendum supplements Section ITTR-18-441, Issue 2, in Operation-Installation-Maintenance Manual for D448 PCM Trunk Carrier System, Publication Number 650059-823-001. Place these pink sheets ahead of Page 01 of the Section.

1.002 This addendum is issued to add information to Table N, revise Fig. 14, and to revise information on the equalizer setting procedure.

2. CHANGES TO THE SECTION

2.001 Add the following at the end of Table N.

OPTION	DESCRIPTION	OPTION FUNCTION
E1		Wink Start Option
Strapped	Conditions the unit for use in offices operating in wink start mode by permanently removing the VF path cut.	
Out	Adds a 625 ms delay between removal of the SF signaling tone and removal of the VF path cut.	

2.002 Delete existing Fig. 14 and substitute attached Fig. 14.

2.003 Delete existing Appendix B and substitute attached Appendix B.

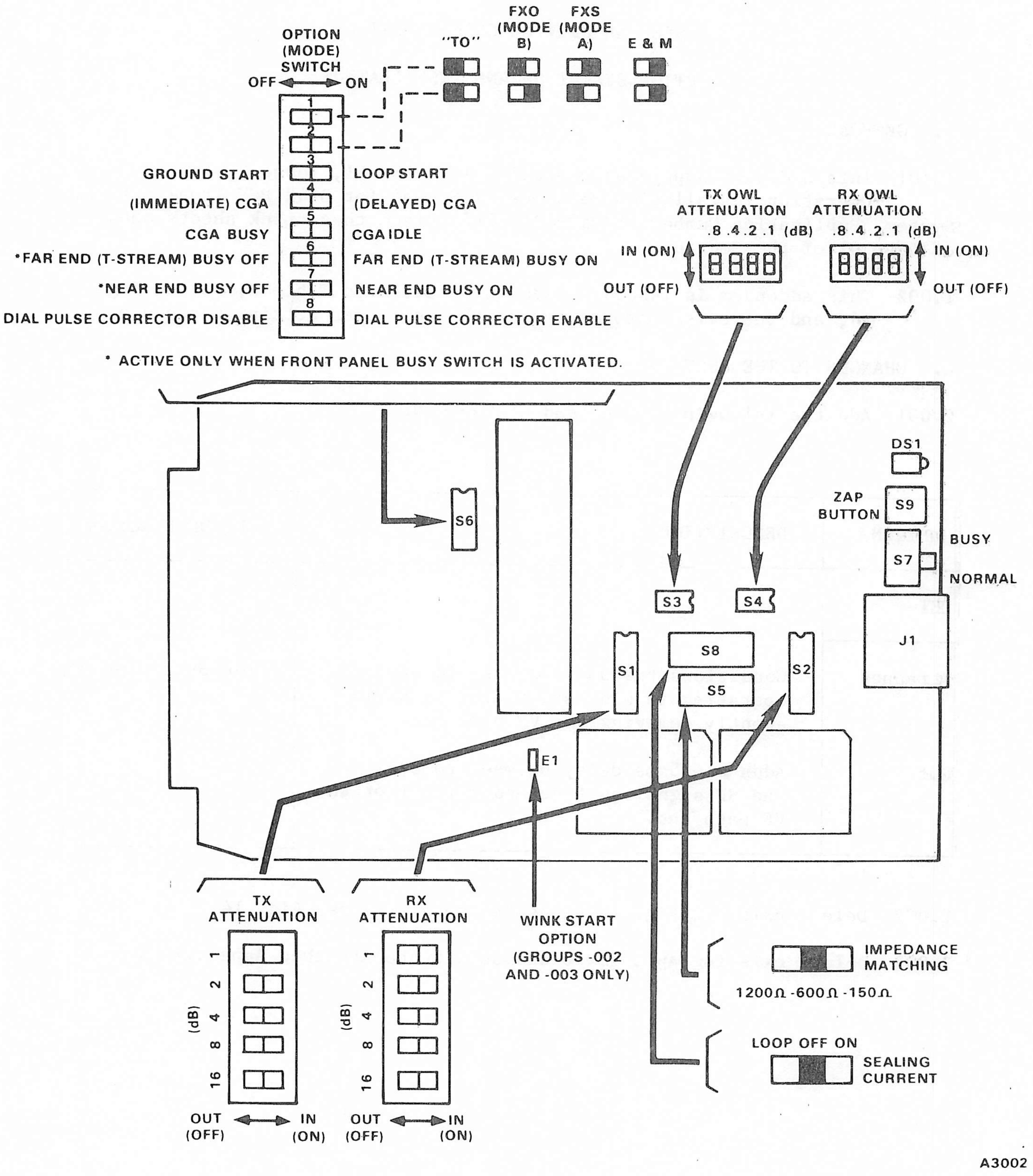
OPTION (MODE) SWITCH
OFF ON
"TO"
FXO (MODE B)
FXS (MODE A)
E & M
1
2
3
4
5
6
7
8
GROUND START
LOOP START
(IMMEDIATE) CGA
(DELAYED) CGA
CGA BUSY
CGA IDLE
*FAR END (T-STREAM) BUSY OFF
FAR END (T-STREAM) BUSY ON
*NEAR END BUSY OFF
NEAR END BUSY ON
DIAL PULSE CORRECTOR DISABLE
DIAL PULSE CORRECTOR ENABLE
* ACTIVE ONLY WHEN FRONT PANEL BUSY SWITCH IS ACTIVATED.
TX OWL ATTENUATION
.8 .4 .2 .1 (dB)
IN (ON)
OUT (OFF)
RX OWL ATTENUATION
.8 .4 .2 .1 (dB)
IN (ON)
OUT (OFF)
DS1
ZAP BUTTON
S9
BUSY
S7
NORMAL
S6
S3
S4
J1
S8
S1
S2
S5
E1
TX ATTENUATION
(dB)
1
2
4
8
16
OUT (OFF)
IN (ON)
RX ATTENUATION
(dB)
1
2
4
8
16
OUT (OFF)
IN (ON)
WINK START OPTION (GROUPS -002 AND -003 ONLY)
IMPEDANCE MATCHING
1200Ω -600Ω -150Ω
LOOP OFF ON
SEALING CURRENT
A3002

Fig. 14 -- 4WSF/FX Channel Unit, 628278, Option Locations

D448 EQUALIZER PRESCRIPTION SETTINGS

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1. GENERAL

1.001 These charts present the equalizer prescription settings for the 4-wire equalized transmission only (4WETO), 268210, the 4-wire foreign exchange subscriber with extended VF range (4WFXS/VF), 628230, the 4-wire foreign exchange office with extended VF range (4WFXO/VF), 628240, and the 4-wire duplex (4WDX), 628280 channel units. These charts indicate the proper equalizer settings for various lengths and gauges of cable. The equalizers do not provide any gain at 1 kHz, so equalizer gains are not listed.

1.002 To determine the equalizer setting, find the following chart corresponding to the type and length of cable present. Set the equalizer switches corresponding to the chart. Each column corresponds to a position on one of the equalizer switch blocks. The column heading (1, 2, 4, or 8) refers to the marking on the printed circuit board (not the marking on the switch block). A "0" in the column indicates that the switch position should be OFF (open), and a "1" indicates that the switch position should be ON (closed). To set a switch to the ON position, move the switch towards the marking on the switch block (not the marking on the board). To set a switch in the OFF position, move it away from the marking on the switch block.

1.003 Settings are given for both nonloaded and H88 loaded cables. For nonloaded cables, set the N/L option switch to the N position. For loaded cables, set the switch to the L position.

1.004 The tables for mixed-gauge cables are divided according to the total length of the cable. For example, a section of the chart headed "TL=20" will contain all covered combinations of the two cables that will add up to 20 kilofeet. Some combinations at longer total lengths cannot be equalized and are not listed.

1.005 An example equalizer setting follows:

10 kft of 24-ga and 13 kft of 22-ga nonloaded cable; total length (TL) is 23 kft

Using Chart 6, TL=23, the settings are as follows:

SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
1	2	4	8	1	2	4	8	1	2	4	8
0	0	1	0	1	1	1	0	0	1	1	1

And so the equalizer switches are set as follows:

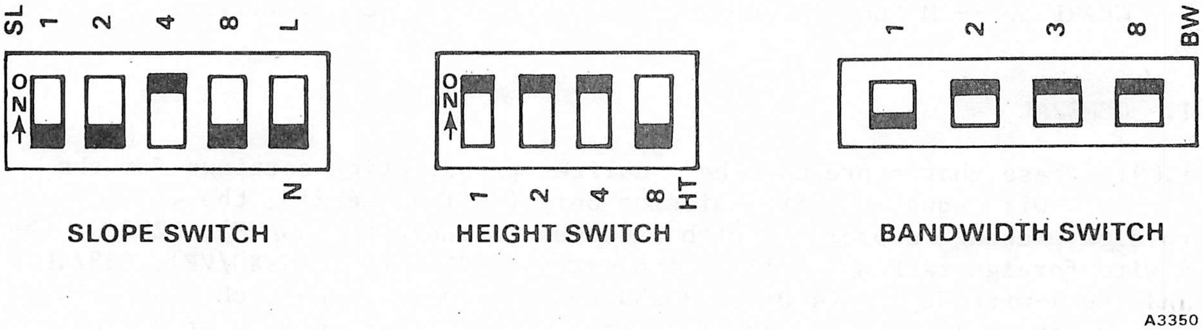


Fig. 1 -- Example Equalizer Switch Settings

CHART 1
EQUALIZER PRESCRIPTION SETTINGS
19-GA NONLOADED CABLE

Note: Set switches S1 and S2 to 600; set the N/L switch to N.

CABLE LENGTH (KFT)	EQUALIZER SETTINGS											
	SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
	1	2	4	8	1	2	4	8	1	2	4	8
1	0	0	0	0	0	0	0	0	0	1	1	1
2	0	0	0	0	0	0	0	0	0	1	1	1
3	0	0	0	0	0	0	0	0	0	1	1	1
4	0	0	0	0	0	0	0	0	0	1	1	1
5	0	0	0	0	0	0	0	0	0	1	1	1
6	0	0	0	0	0	1	0	0	0	1	1	1
7	1	0	0	0	1	0	0	0	0	1	1	1
8	0	0	0	0	1	1	0	0	0	1	1	1
9	1	0	0	0	0	1	0	0	0	1	1	1
10	0	0	0	0	0	0	1	0	0	1	1	1
11	1	0	0	0	1	1	0	0	0	1	1	1
12	0	0	0	0	1	0	1	0	0	1	1	1
13	1	0	0	0	0	0	1	0	0	1	1	1
14	0	0	0	0	0	1	1	0	0	1	1	1
15	1	0	0	0	1	0	1	0	0	1	1	1
16	0	1	0	0	1	0	1	0	1	0	1	1
17	0	1	0	0	1	0	1	0	0	1	1	1
18	1	1	0	0	1	0	1	0	1	0	1	1
19	0	1	0	0	0	1	1	0	0	1	1	1
20	0	1	0	0	0	1	1	0	0	1	1	1
21	1	1	0	0	0	1	1	0	0	1	1	1
22	0	1	0	0	1	1	1	0	0	1	1	1
23	0	0	1	0	0	1	1	0	0	1	1	1
24	0	0	1	0	0	1	1	0	0	1	1	1
25	1	1	0	0	1	1	1	0	0	1	1	1
26	1	0	1	0	0	1	1	0	0	1	1	1
27	0	0	1	0	1	1	1	0	0	1	1	1
28	0	0	1	0	1	1	1	0	0	1	1	1
29	1	0	1	0	1	1	1	0	0	1	1	1
30	1	0	1	0	1	1	1	0	0	1	1	1
31	0	1	1	0	1	1	1	0	0	1	1	1
32	0	1	1	0	1	1	1	0	0	1	1	1
33	0	1	1	0	1	1	1	0	0	1	1	1
34	1	1	1	0	1	1	1	0	0	1	1	1
35	0	0	0	1	1	1	1	0	0	1	1	1

CHART 2
EQUALIZER PRESCRIPTION SETTINGS
22-GA NONLOADED CABLE

Note: Set switches S1 and S2 to 600; set the N/L switch to N.

	EQUALIZER SETTINGS											
CABLE LENGTH	SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
(KFT)	1	2	4	8	1	2	4	8	1	2	4	8
1	0	0	0	0	0	0	0	0	0	1	1	1
2	0	0	0	0	0	0	0	0	0	1	1	1
3	0	0	0	0	0	0	0	0	0	1	1	1
4	0	0	0	0	0	0	0	0	0	1	1	1
5	0	0	0	0	0	0	0	0	0	1	1	1
6	1	0	0	0	1	0	0	0	0	1	1	1
7	0	0	0	0	0	1	0	0	0	1	1	1
8	0	0	0	0	1	1	0	0	0	1	1	1
9	1	0	0	0	1	1	0	0	1	0	1	1
10	0	0	0	0	0	0	1	0	0	1	1	1
11	0	0	0	0	1	0	1	0	0	1	1	1
12	1	0	0	0	0	0	1	0	0	1	1	1
13	0	0	0	0	0	1	1	0	0	1	1	1
14	1	0	0	0	1	0	1	0	0	1	1	1
15	0	1	0	0	1	0	1	0	1	0	1	1
16	1	0	0	0	0	1	1	0	0	1	1	1
17	1	1	0	0	1	0	1	0	1	0	1	1
18	0	1	0	0	0	1	1	0	0	1	1	1
19	1	1	0	0	0	1	1	0	1	0	1	1
20	0	1	0	0	1	1	1	0	0	1	1	1
21	0	0	1	0	0	1	1	0	0	1	1	1
22	1	1	0	0	1	1	1	0	0	1	1	1
23	1	0	1	0	0	1	1	0	0	1	1	1
24	0	0	1	0	1	1	1	0	0	1	1	1
25	1	0	1	0	1	1	1	0	0	1	1	1
26	1	0	1	0	1	1	1	0	0	1	1	1

CHART 3
EQUALIZER PRESCRIPTION SETTINGS
24-GA NONLOADED CABLE

Note: Set switches S1 and S2 to 600; set the N/L switch to N.

	EQUALIZER SETTINGS											
CABLE LENGTH	SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
(KFT)	1	2	4	8	1	2	4	8	1	2	4	8
1	0	0	0	0	0	0	0	0	0	1	1	1
2	0	0	0	0	0	0	0	0	0	1	1	1
3	0	0	0	0	0	0	0	0	0	1	1	1
4	0	0	0	0	0	0	0	0	0	1	1	1
5	0	0	0	0	0	1	0	0	0	1	1	1
6	0	0	0	0	0	1	0	0	0	1	1	1
7	0	0	0	0	1	1	0	0	1	0	1	1
8	0	0	0	0	1	1	0	0	0	1	1	1
9	0	0	0	0	0	0	1	0	0	1	1	1
10	1	0	0	0	1	1	0	0	0	1	1	1
11	1	0	0	0	0	0	1	0	0	1	1	1
12	0	0	0	0	0	1	1	0	0	1	1	1
13	1	0	0	0	1	0	1	0	0	1	1	1
14	1	0	0	0	0	1	1	0	0	1	1	1
15	1	1	0	0	1	0	1	0	1	0	1	1
16	0	1	0	0	0	1	1	0	0	1	1	1
17	1	1	0	0	0	1	1	0	1	0	1	1
18	0	1	0	0	1	1	1	0	0	1	1	1
19	1	1	0	0	1	1	1	0	0	1	1	1
20	0	1	0	0	0	0	0	1	0	1	1	1

CHART 4
EQUALIZER PRESCRIPTION SETTINGS
25-GA NONLOADED CABLE

Note: Set switches S1 and S2 to 600; set the N/L switch to N.

	EQUALIZER SETTINGS											
CABLE LENGTH	SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
(KFT)	1	2	4	8	1	2	4	8	1	2	4	8
1	0	0	0	0	0	0	0	0	0	1	1	1
2	0	0	0	0	0	0	0	0	0	1	1	1
3	0	0	0	0	0	0	0	0	0	1	1	1
4	0	0	0	0	0	0	0	0	0	1	1	1
5	0	0	0	0	0	1	0	0	0	1	1	1
6	0	0	0	0	0	1	0	0	0	1	1	1
7	0	0	0	0	0	1	0	0	0	1	1	1
8	1	0	0	0	0	1	0	0	0	1	1	1
9	1	0	0	0	0	1	0	0	0	1	1	1
10	0	0	0	0	1	0	1	0	0	1	1	1
11	0	0	0	0	1	0	1	0	0	1	1	1
12	1	0	0	0	1	0	1	0	0	1	1	1
13	1	0	0	0	1	0	1	0	0	1	1	1
14	0	1	0	0	1	1	0	0	0	1	1	1
14	0	1	0	0	1	0	1	0	0	1	1	1
15	0	1	0	0	0	1	1	0	0	1	1	1
16	0	1	0	0	0	1	1	0	0	1	1	1
17	0	1	0	0	1	1	1	0	0	1	1	1
18	0	1	0	0	1	1	1	0	0	1	1	1
19	0	0	1	0	1	1	1	0	0	1	1	1

CHART 5
EQUALIZER PRESCRIPTION SETTINGS
26-GA NONLOADED CABLE

Note: Set switches S1 and S2 to 600; set the N/L switch to N.

CABLE LENGTH (KFT)	EQUALIZER SETTINGS											
	SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
	1	2	4	8	1	2	4	8	1	2	4	8
1	0	0	0	0	0	0	0	0	0	1	1	1
2	0	0	0	0	1	0	0	0	0	1	1	1
3	0	0	0	0	0	1	0	0	0	1	1	1
4	0	0	0	0	1	0	0	0	1	0	1	1
5	0	0	0	0	1	0	0	0	1	1	1	1
6	0	0	0	0	0	1	0	0	0	1	1	1
7	0	0	0	0	1	1	0	0	1	0	1	1
8	1	0	0	0	0	1	0	0	1	0	1	1
9	1	0	0	0	1	1	0	0	1	0	1	1
10	0	0	0	0	1	0	1	0	0	1	1	1
11	0	0	0	0	0	1	1	0	0	1	1	1
12	1	0	0	0	1	0	1	0	0	1	1	1
13	1	0	0	0	0	1	1	0	0	1	1	1
14	0	1	0	0	0	1	1	0	1	0	1	1

CHART 6
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA NONLOADED CABLE

Note: Set switches S1 and S2 to 600; set the N/L switch to N.

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL= 9													
7	2	0	0	0	0	0	0	1	0	0	1	1	1
8	1	0	0	0	0	0	0	1	0	0	1	1	1
TL=10													
5	5	1	0	0	0	1	1	0	0	1	0	1	1
6	4	1	0	0	0	1	1	0	0	1	0	1	1
7	3	1	0	0	0	1	1	0	0	1	0	1	1
8	2	1	0	0	0	1	1	0	0	1	0	1	1
9	1	1	0	0	0	1	1	0	0	0	1	1	1
TL=11													
2	9	0	0	0	0	1	0	1	0	0	1	1	1
3	8	0	0	0	0	1	0	1	0	0	1	1	1
4	7	0	0	0	0	1	0	1	0	0	1	1	1
5	6	0	0	0	0	1	0	1	0	0	1	1	1
6	5	0	0	0	0	1	0	1	0	0	1	1	1
7	4	0	0	0	0	1	0	1	0	0	1	1	1
8	3	0	0	0	0	1	0	1	0	0	1	1	1
9	2	1	0	0	0	0	0	1	0	1	0	1	1
10	1	1	0	0	0	0	0	1	0	1	0	1	1
TL=12													
1	11	1	0	0	0	0	0	1	0	0	1	1	1
2	10	1	0	0	0	0	0	1	0	0	1	1	1
3	9	1	0	0	0	0	0	1	0	0	1	1	1
4	8	1	0	0	0	0	0	1	0	0	1	1	1
5	7	1	0	0	0	0	0	1	0	0	1	1	1
6	6	1	0	0	0	0	0	1	0	0	1	1	1
7	5	1	0	0	0	0	0	1	0	0	1	1	1
8	4	1	0	0	0	0	0	1	0	0	1	1	1
9	3	1	0	0	0	0	0	1	0	0	1	1	1
10	2	1	0	0	0	0	1	1	0	0	1	1	1
11	1	1	0	0	0	0	1	1	0	0	1	1	1

CHART 6 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=13													
1	12	0	0	0	0	0	1	1	0	1	0	1	1
2	11	0	0	0	0	0	1	1	0	1	0	1	1
3	10	0	0	0	0	0	1	1	0	1	0	1	1
4	9	1	0	0	0	1	0	1	0	1	0	1	1
5	8	1	0	0	0	1	0	1	0	1	0	1	1
6	7	1	0	0	0	1	0	1	0	1	0	1	1
7	6	1	0	0	0	1	0	1	0	1	0	1	1
8	5	1	0	0	0	1	0	1	0	1	0	1	1
9	4	1	0	0	0	1	0	1	0	1	0	1	1
10	3	1	0	0	0	1	0	1	0	1	0	1	1
11	2	1	0	0	0	1	0	1	0	1	0	1	1
12	1	1	0	0	0	1	0	1	0	1	0	1	1
TL=14													
1	13	1	0	0	0	1	0	1	0	1	0	1	1
2	12	1	0	0	0	1	0	1	0	1	0	1	1
3	11	0	1	0	0	0	0	1	0	1	0	1	1
4	10	0	1	0	0	0	0	1	0	1	0	1	1
5	9	0	1	0	0	0	0	1	0	1	0	1	1
6	8	0	1	0	0	0	0	1	0	1	0	1	1
7	7	0	1	0	0	0	0	1	0	1	0	1	1
8	6	0	1	0	0	1	0	1	0	0	0	1	1
9	5	0	1	0	0	1	0	1	0	1	0	1	1
10	4	0	1	0	0	1	0	1	0	1	0	1	1
11	3	0	1	0	0	1	0	1	0	1	0	1	1
12	2	0	1	0	0	1	0	1	0	1	0	1	1
13	1	0	0	0	0	1	1	1	0	0	1	1	1
TL=15													
1	14	0	1	0	0	1	0	1	0	1	0	1	1
2	13	1	0	0	0	0	1	1	0	0	1	1	1
3	12	1	0	0	0	0	1	1	0	0	1	1	1
4	11	1	0	0	0	0	1	1	0	0	1	1	1
5	10	1	0	0	0	0	1	1	0	0	1	1	1
6	9	1	0	0	0	0	1	1	0	0	1	1	1
7	8	1	0	0	0	0	1	1	0	0	1	1	1

CHART 6 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=15 (cont)													
8	7	1	0	0	0	0	1	1	0	0	1	1	1
9	6	1	0	0	0	0	1	1	0	0	1	1	1
10	5	1	0	0	0	0	1	1	0	0	1	1	1
11	4	1	0	0	0	0	1	1	0	0	1	1	1
12	3	0	1	0	0	1	0	1	0	1	0	1	1
13	2	0	1	0	0	1	0	1	0	1	0	1	1
14	1	0	1	0	0	1	0	1	0	1	0	1	1
TL=16													
1	15	0	1	0	0	1	0	1	0	1	0	1	1
2	14	0	1	0	0	1	0	1	0	1	0	1	1
3	13	0	1	0	0	1	0	1	0	1	0	1	1
4	12	1	1	0	0	1	0	1	0	1	0	1	1
5	11	1	1	0	0	1	0	1	0	1	0	1	1
6	10	1	1	0	0	1	0	1	0	1	0	1	1
7	9	1	1	0	0	1	0	1	0	1	0	1	1
8	8	1	1	0	0	1	0	1	0	1	0	1	1
9	7	1	1	0	0	1	0	1	0	1	0	1	1
10	6	1	1	0	0	1	0	1	0	1	0	1	1
11	5	0	1	0	0	0	1	1	0	1	0	1	1
12	4	0	1	0	0	0	1	1	0	1	0	1	1
13	3	0	1	0	0	0	1	1	0	0	1	1	1
14	2	0	1	0	0	0	1	1	0	0	1	1	1
15	1	0	1	0	0	0	1	1	0	0	1	1	1
TL=17													
1	16	1	1	0	0	1	0	1	0	1	0	1	1
2	15	0	1	0	0	0	1	1	0	0	1	1	1
3	14	0	1	0	0	0	1	1	0	0	1	1	1
4	13	0	1	0	0	0	1	1	0	0	1	1	1
5	12	0	1	0	0	0	1	1	0	0	1	1	1
6	11	0	1	0	0	0	1	1	0	0	1	1	1
7	10	0	1	0	0	0	1	1	0	0	1	1	1
8	9	0	1	0	0	0	1	1	0	0	1	1	1
9	8	0	1	0	0	0	1	1	0	0	1	1	1
10	7	0	1	0	0	0	1	1	0	0	1	1	1

CHART 6 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=17 (cont)													
11	6	0	1	0	0	0	1	1	0	0	1	1	1
12	5	0	1	0	0	0	1	1	0	0	1	1	1
13	4	0	1	0	0	0	1	1	0	0	1	1	1
14	3	0	1	0	0	0	1	1	0	0	1	1	1
15	2	1	1	0	0	0	1	1	0	1	0	1	1
16	1	1	1	0	0	0	1	1	0	1	0	1	1
TL=18													
1	17	0	1	0	0	0	1	1	0	0	1	1	1
2	16	0	1	0	0	0	1	1	0	0	1	1	1
3	15	0	0	1	0	1	0	1	0	1	0	1	1
4	14	0	0	1	0	1	0	1	0	1	0	1	1
5	13	1	1	0	0	0	1	1	0	1	0	1	1
6	12	1	1	0	0	0	1	1	0	1	0	1	1
7	11	1	1	0	0	0	1	1	0	1	0	1	1
8	10	1	1	0	0	0	1	1	0	1	0	1	1
9	9	1	1	0	0	0	1	1	0	1	0	1	1
10	8	1	1	0	0	0	1	1	0	0	1	1	1
11	7	1	1	0	0	0	1	1	0	0	1	1	1
12	6	1	1	0	0	0	1	1	0	0	1	1	1
13	5	1	1	0	0	0	1	1	0	0	1	1	1
14	4	1	1	0	0	0	1	1	0	0	1	1	1
15	3	0	1	0	0	1	1	1	0	0	1	1	1
16	2	0	1	0	0	1	1	1	0	0	1	1	1
17	1	0	1	0	0	1	1	1	0	0	1	1	1
TL=19													
1	18	0	1	1	0	0	1	1	0	0	1	1	1
2	17	0	1	1	0	0	1	1	0	0	1	1	1
3	16	0	1	1	0	0	1	1	0	0	1	1	1
4	15	0	1	1	0	0	1	1	0	0	1	1	1
5	14	0	1	0	0	1	1	1	0	0	1	1	1
6	13	0	1	0	0	1	1	1	0	0	1	1	1
7	12	0	1	0	0	1	1	1	0	0	1	1	1
8	11	0	1	0	0	1	1	1	0	0	1	1	1
9	10	0	1	0	0	1	1	1	0	0	1	1	1

CHART 6 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA NONLOADED CABLE

CABLE LENGTH						EQUALIZER SETTINGS							
(KFT)		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=19 (cont)													
10	9	0	1	0	0	1	1	1	0	0	1	1	1
11	8	0	1	0	0	1	1	1	0	0	1	1	1
12	7	0	1	0	0	1	1	1	0	0	1	1	1
13	6	0	1	0	0	1	1	1	0	0	1	1	1
14	5	0	0	1	0	0	1	1	0	1	0	1	1
15	4	0	0	1	0	0	1	1	0	1	0	1	1
16	3	0	0	1	0	0	1	1	0	0	1	1	1
17	2	0	0	1	0	0	1	1	0	0	1	1	1
18	1	0	0	1	0	0	1	1	0	0	1	1	1
TL=20													
1	19	0	1	0	0	1	1	1	0	0	1	1	1
2	18	0	1	0	0	1	1	1	0	0	1	1	1
3	17	0	1	0	0	1	1	1	0	0	1	1	1
4	16	0	0	1	0	0	1	1	0	1	0	1	1
5	15	0	0	1	0	0	1	1	0	1	0	1	1
6	14	0	0	1	0	0	1	1	0	0	1	1	1
7	13	0	0	1	0	0	1	1	0	0	1	1	1
8	12	0	0	1	0	0	1	1	0	0	1	1	1
9	11	0	0	1	0	0	1	1	0	0	1	1	1
10	10	0	0	1	0	0	1	1	0	0	1	1	1
11	9	0	0	1	0	0	1	1	0	0	1	1	1
12	8	1	1	0	0	1	1	1	0	0	1	1	1
13	7	1	1	0	0	1	1	1	0	0	1	1	1
14	6	1	1	0	0	1	1	1	0	0	1	1	1
15	5	1	1	0	0	1	1	1	0	0	1	1	1
16	4	1	1	0	0	1	1	1	0	0	1	1	1
17	3	1	1	0	0	1	1	1	0	0	1	1	1
18	2	1	1	0	0	1	1	1	0	0	1	1	1
19	1	0	1	0	0	0	0	0	1	0	1	1	1
TL=21													
1	20	0	0	1	0	0	1	1	0	0	1	1	1
2	19	0	0	1	0	0	1	1	0	0	1	1	1
3	18	0	0	1	0	0	1	1	0	0	1	1	1
4	17	1	1	0	0	1	1	1	0	0	1	1	1
5	16	1	1	0	0	1	1	1	0	0	1	1	1

CHART 6 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=21 (cont)													
6	15	1	1	0	0	1	1	1	0	0	1	1	1
7	14	1	1	0	0	1	1	1	0	0	1	1	1
8	13	1	1	0	0	1	1	1	0	0	1	1	1
9	12	1	1	0	0	1	1	1	0	0	1	1	1
10	11	1	1	0	0	1	1	1	0	0	1	1	1
11	10	1	1	0	0	1	1	1	0	0	1	1	1
12	9	0	1	0	0	0	0	0	1	0	1	1	1
13	8	0	1	0	0	0	0	0	1	0	1	1	1
14	7	0	1	0	0	0	0	0	1	0	1	1	1
15	6	0	1	0	0	0	0	0	1	0	1	1	1
16	5	0	1	0	0	0	0	0	1	0	1	1	1
17	4	0	0	1	0	1	1	1	0	0	1	1	1
18	3	0	0	1	0	1	1	1	0	0	1	1	1
TL=22													
1	21	1	1	0	0	1	1	1	0	0	1	1	1
2	20	1	1	0	0	1	1	1	0	0	1	1	1
3	19	1	1	0	0	1	1	1	0	0	1	1	1
4	18	1	1	0	0	1	1	1	0	0	1	1	1
5	17	1	0	1	0	1	1	1	0	0	1	1	1
6	16	1	0	1	0	1	1	1	0	0	1	1	1
7	15	1	0	1	0	1	1	1	0	0	1	1	1
8	14	0	0	1	0	1	1	1	0	0	1	1	1
9	13	0	0	1	0	1	1	1	0	0	1	1	1
10	12	0	0	1	0	1	1	1	0	0	1	1	1
11	11	0	0	1	0	1	1	1	0	0	1	1	1
12	10	0	0	1	0	1	1	1	0	0	1	1	1
13	9	0	0	1	0	1	1	1	0	0	1	1	1
14	8	0	0	1	0	1	1	1	0	0	1	1	1
15	7	0	0	1	0	1	1	1	0	0	1	1	1
16	6	0	0	1	0	1	1	1	0	0	1	1	1
17	5	1	1	0	0	0	0	0	1	0	1	1	1
TL=23													
1	22	0	0	1	0	1	1	1	0	0	1	1	1
2	21	0	0	1	0	1	1	1	0	0	1	1	1
3	20	0	0	1	0	1	1	1	0	0	1	1	1
4	19	0	0	1	0	1	1	1	0	0	1	1	1

CHART 6 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=23 (cont)													
5	18	0	0	1	0	1	1	1	0	0	1	1	1
6	17	0	0	1	0	1	1	1	0	0	1	1	1
7	16	0	0	1	0	1	1	1	0	0	1	1	1
8	15	0	0	1	0	1	1	1	0	0	1	1	1
9	14	0	0	1	0	1	1	1	0	0	1	1	1
10	13	0	0	1	0	1	1	1	0	0	1	1	1
11	12	1	1	0	0	0	0	0	1	0	1	1	1
12	11	1	1	0	0	0	0	0	1	0	1	1	1
13	10	1	1	0	0	0	0	0	1	0	1	1	1
14	9	1	1	0	0	0	0	0	1	0	1	1	1
15	8	1	0	1	0	1	1	1	0	0	1	1	1
TL=24													
1	23	0	0	1	0	1	1	1	0	0	1	1	1
2	22	0	0	1	0	1	1	1	0	0	1	1	1
3	21	0	0	1	0	1	1	1	0	0	1	1	1
4	20	1	1	0	0	0	0	0	1	0	1	1	1
5	19	1	0	1	0	1	1	1	0	0	1	1	1
6	18	1	0	1	0	1	1	1	0	0	1	1	1
7	17	1	0	1	0	1	1	1	0	0	1	1	1
8	16	1	0	1	0	1	1	1	0	0	1	1	1
9	15	1	0	1	0	1	1	1	0	0	1	1	1
10	14	1	0	1	0	1	1	1	0	0	1	1	1
11	13	1	0	1	0	1	1	1	0	0	1	1	1
12	12	1	0	1	0	1	1	1	0	0	1	1	1
13	11	1	0	1	0	1	1	1	0	0	1	1	1
TL=25													
1	24	1	0	1	0	1	1	1	0	0	1	1	1
2	23	1	0	1	0	1	1	1	0	0	1	1	1
3	22	1	0	1	0	1	1	1	0	0	1	1	1
4	21	1	0	1	0	1	1	1	0	0	1	1	1
5	20	1	0	1	0	1	1	1	0	0	1	1	1
6	19	1	0	1	0	1	1	1	0	0	1	1	1
7	18	1	0	1	0	1	1	1	0	0	1	1	1
8	17	1	0	1	0	1	1	1	0	0	1	1	1

CHART 6 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=25 (cont)													
9	16	1	0	1	0	1	1	1	0	0	1	1	1
10	15	0	0	1	0	0	0	0	1	0	1	1	1
TL=26													
1	25	0	1	1	0	1	1	1	0	0	1	1	1
2	24	0	1	1	0	1	1	1	0	0	1	1	1

CHART 7
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA NONLOADED CABLE

Note: Set switches S1 and S2 to 600; set the N/L switch to N.

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL= 7													
5	2	0	0	0	0	1	1	0	0	1	0	1	1
6	1	0	0	0	0	1	1	0	0	1	0	1	1
TL= 8													
4	4	0	0	0	0	1	1	0	0	0	1	1	1
5	3	0	0	0	0	1	1	0	0	0	1	1	1
6	2	0	0	0	0	1	1	0	0	0	1	1	1
7	1	1	0	0	0	0	1	0	0	0	0	1	1
TL= 9													
3	6	0	0	0	0	0	0	1	0	0	1	1	1
4	5	0	0	0	0	0	0	1	0	0	1	1	1
5	4	0	0	0	0	0	0	1	0	0	1	1	1
6	3	0	0	0	0	0	0	1	0	0	1	1	1
7	2	0	0	0	0	0	0	1	0	0	1	1	1
8	1	0	0	0	0	0	0	1	0	0	1	1	1
TL=10													
2	8	1	0	0	0	1	1	0	0	1	0	1	1
3	7	1	0	0	0	1	1	0	0	0	1	1	1
4	6	1	0	0	0	1	1	0	0	0	1	1	1
5	5	1	0	0	0	1	1	0	0	0	1	1	1
6	4	1	0	0	0	1	1	0	0	0	1	1	1
7	3	1	0	0	0	1	1	0	0	0	1	1	1
8	2	0	0	0	0	1	0	1	0	0	1	1	1
9	1	0	0	0	0	1	0	1	0	0	1	1	1
TL=11													
1	10	0	0	0	0	1	0	1	0	0	1	1	1
2	9	0	0	0	0	1	0	1	0	0	1	1	1
3	8	1	0	0	0	0	0	1	0	1	0	1	1
4	7	1	0	0	0	0	0	1	0	1	0	1	1
5	6	1	0	0	0	0	0	1	0	1	0	1	1
6	5	1	0	0	0	0	0	1	0	0	1	1	1

CHART 7 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=11 (cont)													
7	4	1	0	0	0	0	0	1	0	0	1	1	1
8	3	1	0	0	0	0	0	1	0	0	1	1	1
9	2	1	0	0	0	0	0	1	0	0	1	1	1
10	1	1	0	0	0	0	0	1	0	0	1	1	1
TL=12													
1	11	1	0	0	0	0	0	1	0	0	1	1	1
2	10	1	0	0	0	0	0	1	0	0	1	1	1
3	9	1	0	0	0	0	0	1	0	0	1	1	1
4	8	0	0	0	0	0	1	1	0	0	1	1	1
5	7	0	0	0	0	0	1	1	0	0	1	1	1
6	6	0	0	0	0	0	1	1	0	0	1	1	1
7	5	0	0	0	0	0	1	1	0	0	1	1	1
8	4	0	0	0	0	0	1	1	0	0	1	1	1
9	3	0	0	0	0	0	1	1	0	0	1	1	1
10	2	1	0	0	0	1	0	1	0	0	1	1	1
11	1	1	0	0	0	1	0	1	0	0	1	1	1
TL=13													
1	12	0	0	0	0	0	1	1	0	0	1	1	1
2	11	1	0	0	0	1	0	1	0	0	1	1	1
3	10	1	0	0	0	1	0	1	0	0	1	1	1
4	9	1	0	0	0	1	0	1	0	0	1	1	1
5	8	1	0	0	0	1	0	1	0	0	1	1	1
6	7	1	0	0	0	1	0	1	0	0	1	1	1
7	6	1	0	0	0	1	0	1	0	0	1	1	1
8	5	1	0	0	0	1	0	1	0	0	1	1	1
9	4	0	1	0	0	0	0	1	0	0	1	1	1
10	3	0	1	0	0	1	0	1	0	0	0	1	1
11	2	0	1	0	0	1	0	1	0	1	0	1	1
12	1	0	0	0	0	1	1	1	0	0	1	1	1
TL=14													
1	13	0	1	0	0	0	0	1	0	0	1	1	1
2	12	1	1	0	0	0	0	1	0	0	0	1	1
3	11	0	1	0	0	1	0	1	0	1	0	1	1

CHART 7 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=14 (cont)													
4	10	0	1	0	0	1	0	1	0	1	0	1	1
5	9	0	0	0	0	1	1	1	0	0	1	1	1
6	8	0	0	0	0	1	1	1	0	0	1	1	1
7	7	1	0	0	0	0	1	1	0	0	1	1	1
8	6	1	0	0	0	0	1	1	0	0	1	1	1
9	5	1	0	0	0	0	1	1	0	0	1	1	1
10	4	1	0	0	0	0	1	1	0	0	1	1	1
11	3	1	0	0	0	0	1	1	0	0	1	1	1
12	2	0	1	0	0	1	0	1	0	0	1	1	1
13	1	1	1	0	0	1	0	1	0	1	0	1	1
TL=15													
1	14	1	0	0	0	0	1	1	0	0	1	1	1
2	13	1	0	0	0	0	1	1	0	0	1	1	1
3	12	1	0	0	0	0	1	1	0	0	1	1	1
4	11	0	1	0	0	1	0	1	0	0	1	1	1
5	10	0	1	0	0	1	0	1	0	0	1	1	1
6	9	0	1	0	0	1	0	1	0	0	1	1	1
7	8	1	1	0	0	1	0	1	0	1	0	1	1
8	7	1	1	0	0	1	0	1	0	1	0	1	1
9	6	1	1	0	0	1	0	1	0	1	0	1	1
10	5	0	1	0	0	0	1	1	0	1	0	1	1
11	4	0	1	0	0	0	1	1	0	1	0	1	1
12	3	1	0	0	0	1	1	1	0	0	1	1	1
13	2	1	0	0	0	1	1	1	0	0	1	1	1
14	1	1	0	0	0	1	1	1	0	0	1	1	1
TL=16													
1	15	1	1	0	0	1	0	1	0	0	1	1	1
2	14	1	1	0	0	1	0	1	0	1	0	1	1
3	13	1	1	0	0	1	0	1	0	1	0	1	1
4	12	0	1	0	0	0	1	1	0	1	0	1	1
5	11	0	1	0	0	0	1	1	0	0	1	1	1
6	10	0	1	0	0	0	1	1	0	0	1	1	1
7	9	0	1	0	0	0	1	1	0	0	1	1	1
8	8	1	0	0	0	1	1	1	0	0	1	1	1

CHART 7 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=16 (cont)													
9	7	1	0	0	0	1	1	1	0	0	1	1	1
10	6	1	0	0	0	1	1	1	0	0	1	1	1
11	5	0	1	0	0	0	1	1	0	0	1	1	1
12	4	1	1	0	0	0	1	1	0	1	0	1	1
13	3	1	1	0	0	0	1	1	0	1	0	1	1
TL=17													
1	16	0	1	0	0	0	1	1	0	0	1	1	1
2	15	0	1	0	0	0	1	1	0	0	1	1	1
3	14	0	1	0	0	0	1	1	0	0	1	1	1
4	13	0	1	0	0	0	1	1	0	0	1	1	1
5	12	0	1	0	0	0	1	1	0	0	1	1	1
6	11	1	1	0	0	0	1	1	0	1	0	1	1
7	10	1	1	0	0	0	1	1	0	1	0	1	1
8	9	1	1	0	0	0	1	1	0	1	0	1	1
9	8	1	1	0	0	0	1	1	0	1	0	1	1
10	7	1	1	0	0	0	1	1	0	0	1	1	1
11	6	0	1	0	0	1	1	1	0	0	1	1	1
12	5	0	1	0	0	1	1	1	0	0	1	1	1
TL=18													
1	17	0	0	1	0	1	0	1	0	1	0	1	1
2	16	1	1	0	0	0	1	1	0	1	0	1	1
3	15	1	1	0	0	0	1	1	0	0	1	1	1
4	14	1	1	0	0	0	1	1	0	0	1	1	1
5	13	1	1	0	0	0	1	1	0	0	1	1	1
6	12	0	1	0	0	1	1	1	0	0	1	1	1
7	11	0	1	0	0	1	1	1	0	0	1	1	1
8	10	0	1	0	0	1	1	1	0	0	1	1	1
9	9	0	1	0	0	1	1	1	0	0	1	1	1
10	8	0	1	0	0	1	1	1	0	0	1	1	1
11	7	0	0	1	0	0	1	1	0	1	0	1	1

CHART 7 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=19													
1	18	1	1	0	0	0	1	1	0	0	1	1	1
2	17	0	1	0	0	1	1	1	0	0	1	1	1
3	16	0	1	0	0	1	1	1	0	0	1	1	1
4	15	0	1	0	0	1	1	1	0	0	1	1	1
5	14	0	0	1	0	0	1	1	0	1	0	1	1
6	13	0	0	1	0	0	1	1	0	0	1	1	1
7	12	0	0	1	0	0	1	1	0	0	1	1	1
8	11	0	0	1	0	0	1	1	0	0	1	1	1
9	10	1	1	0	0	1	1	1	0	0	1	1	1
10	9	1	1	0	0	1	1	1	0	0	1	1	1
TL=20													
1	19	0	1	0	0	1	1	1	0	0	1	1	1
2	18	0	0	1	0	0	1	1	0	0	1	1	1
3	17	0	0	1	0	0	1	1	0	0	1	1	1
4	16	0	0	1	0	0	1	1	0	0	1	1	1
5	15	1	1	0	0	1	1	1	0	0	1	1	1
6	14	1	1	0	0	1	1	1	0	0	1	1	1
7	13	1	1	0	0	1	1	1	0	0	1	1	1
8	12	1	1	0	0	1	1	1	0	0	1	1	1
9	11	0	1	0	0	0	0	0	1	0	1	1	1
TL=21													
1	20	0	0	1	0	0	1	1	0	0	1	1	1
2	19	1	1	0	0	1	1	1	0	0	1	1	1
3	18	1	1	0	0	1	1	1	0	0	1	1	1
4	17	1	1	0	0	1	1	1	0	0	1	1	1
5	16	1	0	1	0	0	1	1	0	0	1	1	1
6	15	1	0	1	0	0	1	1	0	0	1	1	1
7	14	0	0	1	0	1	1	1	0	0	1	1	1
TL=22													
1	21	1	1	0	0	1	1	1	0	0	1	1	1
2	20	1	0	1	0	0	1	1	0	0	1	1	1
3	19	0	0	1	0	1	1	1	0	0	1	1	1

CHART 7 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=22 (cont)													
4	18	0	0	1	0	1	1	1	0	0	1	1	1
5	17	0	0	1	0	1	1	1	0	0	1	1	1
6	16	0	0	1	0	1	1	1	0	0	1	1	1
TL=23													
1	22	0	0	1	0	1	1	1	0	0	1	1	1
2	21	0	0	1	0	1	1	1	0	0	1	1	1
3	20	0	0	1	0	1	1	1	0	0	1	1	1
4	19	0	0	1	0	1	1	1	0	0	1	1	1
TL=24													
1	23	0	0	1	0	1	1	1	0	0	1	1	1
2	22	1	0	1	0	1	1	1	0	0	1	1	1
3	21	1	0	1	0	1	1	1	0	0	1	1	1

CHART 8
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 24-GA NONLOADED CABLE

Note: Set switches S1 and S2 to 600; set the N/L switch to N.

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	24-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL= 6													
5	1	0	0	0	0	0	1	0	0	0	1	1	1
TL= 7													
3	4	0	0	0	0	1	1	0	0	1	0	1	1
4	3	0	0	0	0	1	1	0	0	1	0	1	1
5	2	0	0	0	0	1	1	0	0	1	0	1	1
6	1	0	0	0	0	1	1	0	0	1	0	1	1
TL= 8													
1	7	0	0	0	0	1	1	0	0	1	0	1	1
2	6	1	0	0	0	0	1	0	0	0	0	1	1
3	5	1	0	0	0	0	1	0	0	0	0	1	1
4	4	1	0	0	0	0	1	0	0	0	0	1	1
5	3	1	0	0	0	0	1	0	0	0	0	1	1
6	2	1	0	0	0	0	1	0	0	0	0	1	1
7	1	1	0	0	0	0	1	0	0	0	0	1	1
TL= 9													
1	8	0	0	0	0	0	0	1	0	0	1	1	1
2	7	0	0	0	0	0	0	1	0	0	1	1	1
3	6	0	0	0	0	0	0	1	0	0	1	1	1
4	5	0	0	0	0	0	0	1	0	0	1	1	1
5	4	0	0	0	0	0	0	1	0	0	1	1	1
6	3	0	0	0	0	0	0	1	0	0	1	1	1
7	2	0	0	0	0	0	0	1	0	0	1	1	1
8	1	1	0	0	0	1	1	0	0	1	0	1	1
TL=10													
1	9	1	0	0	0	1	1	0	0	0	1	1	1
2	8	0	0	0	0	1	0	1	0	0	1	1	1
3	7	0	0	0	0	1	0	1	0	0	1	1	1
4	6	0	0	0	0	1	0	1	0	0	1	1	1
5	5	0	0	0	0	1	0	1	0	0	1	1	1

CHART 8 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 24-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	24-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=10 (cont)													
6	4	0	0	0	0	1	0	1	0	0	1	1	1
7	3	0	0	0	0	1	0	1	0	0	1	1	1
8	2	0	0	0	0	1	0	1	0	0	1	1	1
9	1	0	0	0	0	1	0	1	0	0	1	1	1
TL=11													
1	10	1	0	0	0	0	0	1	0	0	1	1	1
2	9	1	0	0	0	0	0	1	0	0	1	1	1
3	8	1	0	0	0	0	0	1	0	0	1	1	1
4	7	1	0	0	0	0	0	1	0	0	1	1	1
5	6	1	0	0	0	0	0	1	0	0	1	1	1
6	5	1	0	0	0	0	0	1	0	0	1	1	1
7	4	1	0	0	0	0	0	1	0	0	1	1	1
8	3	1	0	0	0	0	0	1	0	0	1	1	1
9	2	1	0	0	0	0	0	1	0	0	1	1	1
10	1	1	0	0	0	0	0	1	0	0	1	1	1
TL=12													
1	11	0	1	0	0	0	0	0	0	0	1	1	1
2	10	0	1	0	0	0	0	0	0	0	1	1	1
3	9	1	0	0	0	1	0	1	0	0	1	1	1
4	8	1	0	0	0	1	0	1	0	0	1	1	1
5	7	1	0	0	0	1	0	1	0	0	1	1	1
6	6	1	0	0	0	1	0	1	0	0	1	1	1
7	5	1	0	0	0	1	0	1	0	0	1	1	1
8	4	1	0	0	0	1	0	1	0	0	1	1	1
9	3	1	0	0	0	1	0	1	0	0	1	1	1
10	2	1	0	0	0	1	0	1	0	0	1	1	1
11	1	1	0	0	0	1	0	1	0	0	1	1	1
TL=13													
1	12	0	1	0	0	0	0	1	0	0	1	1	1
2	11	0	1	0	0	0	0	1	0	0	1	1	1
3	10	0	1	0	0	1	0	1	0	0	0	1	1
4	9	0	1	0	0	1	0	1	0	1	0	1	1

CHART 8 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 24-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	24-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=13 (cont)													
5	8	0	1	0	0	1	0	1	0	1	0	1	1
6	7	0	1	0	0	1	0	1	0	1	0	1	1
7	6	0	1	0	0	1	0	1	0	1	0	1	1
8	5	0	1	0	0	1	0	1	0	1	0	1	1
9	4	0	1	0	0	1	0	1	0	1	0	1	1
10	3	0	0	0	0	1	1	1	0	0	1	1	1
11	2	0	0	0	0	1	1	1	0	0	1	1	1
12	1	1	0	0	0	0	1	1	0	0	1	1	1
TL=14													
1	13	1	0	0	0	0	1	1	0	0	1	1	1
2	12	1	0	0	0	0	1	1	0	0	1	1	1
3	11	1	0	0	0	0	1	1	0	0	1	1	1
4	10	1	0	0	0	0	1	1	0	0	1	1	1
5	9	1	0	0	0	0	1	1	0	0	1	1	1
6	8	1	0	0	0	0	1	1	0	0	1	1	1
7	7	0	1	0	0	1	0	1	0	0	1	1	1
8	6	0	1	0	0	1	0	1	0	0	1	1	1
9	5	0	1	0	0	1	0	1	0	0	1	1	1
10	4	1	1	0	0	1	0	1	0	0	0	1	1
11	3	1	1	0	0	1	0	1	0	1	0	1	1
12	2	1	1	0	0	1	0	1	0	1	0	1	1
13	1	1	1	0	0	1	0	1	0	1	0	1	1
TL=15													
1	14	1	1	0	0	1	0	1	0	1	0	1	1
2	13	1	1	0	0	1	0	1	0	1	0	1	1
3	12	1	1	0	0	0	1	1	0	1	0	1	1
4	11	1	1	0	0	0	1	1	0	1	0	1	1
5	10	1	1	0	0	0	1	1	0	0	1	1	1
6	9	1	1	0	0	0	1	1	0	0	1	1	1
7	8	1	1	0	0	0	1	1	0	0	1	1	1
8	7	1	1	0	0	0	1	1	0	0	1	1	1
9	6	1	0	0	0	1	1	1	0	0	1	1	1
10	5	1	0	0	0	1	1	1	0	0	1	1	1
11	4	1	0	0	0	1	1	1	0	0	1	1	1
12	3	1	0	0	0	1	1	1	0	0	1	1	1
13	2	1	0	0	0	1	1	1	0	0	1	1	1
14	1	0	1	0	0	0	1	1	0	0	1	1	1

CHART 8 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 24-GA NONLOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	24-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=16													
1	15	0	1	0	0	0	1	1	0	0	1	1	1
2	14	0	1	0	0	0	1	1	0	0	1	1	1
3	13	0	1	0	0	0	1	1	0	0	1	1	1
4	12	0	1	0	0	0	1	1	0	0	1	1	1
5	11	1	1	0	0	0	1	1	0	1	0	1	1
6	10	1	1	0	0	0	1	1	0	1	0	1	1
7	9	1	1	0	0	0	1	1	0	1	0	1	1
8	8	1	1	0	0	0	1	1	0	1	0	1	1
9	7	1	1	0	0	0	1	1	0	1	0	1	1
10	6	1	1	0	0	0	1	1	0	1	0	1	1
11	5	1	1	0	0	0	1	1	0	1	0	1	1
TL=17													
1	16	1	1	0	0	0	1	1	0	0	1	1	1
2	15	1	1	0	0	0	1	1	0	0	1	1	1
3	14	1	1	0	0	0	1	1	0	0	1	1	1
4	13	0	1	0	0	1	1	1	0	0	1	1	1
5	12	0	1	0	0	1	1	1	0	0	1	1	1
6	11	0	1	0	0	1	1	1	0	0	1	1	1
7	10	0	1	0	0	1	1	1	0	0	1	1	1
8	9	0	1	0	0	1	1	1	0	0	1	1	1
TL=18													
1	17	0	1	0	0	1	1	1	0	0	1	1	1
2	16	0	0	1	0	0	1	1	0	1	0	1	1
3	15	0	0	1	0	0	1	1	0	0	1	1	1
4	14	0	0	1	0	0	1	1	0	0	1	1	1
5	13	0	0	1	0	0	1	1	0	0	1	1	1
6	12	0	0	1	0	0	1	1	0	0	1	1	1
TL=19													
1	18	1	1	0	0	1	1	1	0	0	1	1	1
2	17	1	1	0	0	1	1	1	0	0	1	1	1

CHART 9
EQUALIZER PRESCRIPTION SETTINGS
19-GA H88 LOADED CABLE

Note: Set switches S1 and S2 to 1200; set the N/L switch to L.

	EQUALIZER SETTINGS											
CABLE LENGTH (KFT)	SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
	1	2	4	8	1	2	4	8	1	2	4	8
18	0	0	0	0	1	1	0	0	1	0	0	0
24	0	0	0	0	0	1	0	0	1	0	1	0
30	0	0	0	0	1	1	0	0	1	0	1	0
36	0	0	0	0	0	0	1	0	1	0	1	0
42	0	0	0	0	0	0	1	0	1	0	1	0
48	0	0	0	0	0	0	1	0	1	0	1	0
54	0	0	0	0	1	0	1	0	0	0	1	0
60	0	0	0	0	0	0	1	0	0	1	1	0
66	0	0	0	0	1	0	1	0	1	0	1	0
72	0	0	0	0	1	0	1	0	0	1	1	0
78	0	0	0	0	1	0	1	0	0	1	1	0
84	0	0	0	0	1	0	1	0	0	1	1	0
90	0	0	0	0	0	1	1	0	1	0	1	0
96	0	0	0	0	0	1	1	0	0	1	1	0
102	0	0	0	0	0	1	1	0	0	1	1	0
108	0	0	0	0	0	1	1	0	0	1	1	0
114	0	0	0	0	1	1	1	0	1	0	1	0
120	0	0	0	0	1	1	1	0	1	0	1	0
126	0	0	0	0	1	1	1	0	1	0	1	0
132	0	0	0	0	1	1	1	0	0	1	1	0
138	0	0	0	0	1	1	1	0	0	1	1	0
144	0	0	0	0	1	1	1	0	0	1	1	0
150	0	0	0	0	0	0	0	1	1	0	1	0
156	0	0	0	0	0	0	0	1	1	0	1	0
162	0	0	0	0	1	0	0	1	1	0	1	0
168	0	0	0	0	1	0	0	1	1	0	1	0
174	0	0	0	0	1	0	0	1	1	0	1	0
180	0	0	0	0	1	0	0	1	1	0	1	0
186	0	0	0	0	0	1	0	1	1	0	1	0
192	0	0	0	0	0	1	0	1	1	0	1	0

CHART 10
EQUALIZER PRESCRIPTION SETTINGS
22-GA H88 LOADED CABLE

Note: Set switches S1 and S2 to 1200; set the N/L switch to L.

CABLE LENGTH (KFT)	EQUALIZER SETTINGS											
	SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
	1	2	4	8	1	2	4	8	1	2	4	8
18	0	0	0	0	1	1	0	0	1	1	0	0
24	0	0	0	0	0	1	0	0	0	1	1	0
30	0	0	0	0	0	0	1	0	0	0	1	0
36	1	0	0	0	0	0	1	0	1	1	0	0
42	1	0	0	0	0	0	1	0	0	0	1	0
48	1	0	0	0	0	0	1	0	0	0	1	0
54	1	0	0	0	1	0	1	0	1	1	0	0
60	1	0	0	0	1	0	1	0	0	0	1	0
66	1	0	0	0	1	0	1	0	0	0	1	0
72	1	0	0	0	0	1	1	0	1	1	0	0
78	1	0	0	0	0	1	1	0	0	0	1	0
74	1	0	0	0	0	1	1	0	0	0	1	0
90	1	0	0	0	1	1	1	0	1	1	0	0
96	1	0	0	0	1	1	1	0	1	1	0	0
102	1	0	0	0	1	1	1	0	0	0	1	0

CHART 11
EQUALIZER PRESCRIPTION SETTINGS
24-GA H88 LOADED CABLE

Note: Set switches S1 and S2 to 1200; set the N/L switch to L.

	EQUALIZER SETTINGS											
CABLE LENGTH	SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
(KFT)	1	2	4	8	1	2	4	8	1	2	4	8
18	1	0	0	0	0	0	1	0	1	1	0	0
24	1	0	0	0	0	0	1	0	1	1	0	0
30	0	1	0	0	0	0	1	0	1	1	0	0
36	0	1	0	0	1	0	1	0	1	1	0	0
42	1	0	0	0	0	0	1	0	1	1	0	0
48	1	1	0	0	0	1	1	0	1	1	0	0
54	1	1	0	0	0	1	1	0	1	1	0	0
60	0	0	1	0	1	1	1	0	0	1	0	0
66	1	0	1	0	1	1	1	0	1	1	0	0

CHART 12
EQUALIZER PRESCRIPTION SETTINGS
25-GA H88 LOADED CABLE

Note: Set switches S1 and S2 to 1200; set the N/L switch to L.

CABLE LENGTH (KFT)	SLOPE (SL) 1	2	4	8	HEIGHT (HT) 1	2	4	8	BANDWIDTH (BW) 1	2	4	8
12	0	0	0	0	1	0	0	0	1	1	1	1
18	0	0	0	0	1	0	0	0	1	1	1	1
24	0	1	0	0	0	0	0	0	1	1	1	1
30	1	1	0	0	0	0	0	0	1	1	1	1
36	1	1	0	0	0	0	0	0	1	1	1	1
42	0	0	1	0	0	0	0	0	1	1	1	1
48	1	0	1	0	0	0	0	0	1	1	1	1
54	1	1	1	0	0	0	0	0	1	1	1	1
60	0	1	0	1	0	0	0	0	1	1	1	1

CHART 13
EQUALIZER PRESCRIPTION SETTINGS
26-GA H88 LOADED CABLE

Note: Set switches S1 and S2 to 1200; set the N/L switch to L.

CABLE LENGTH (KFT)	SLOPE (SL) 1	2	4	8	HEIGHT (HT) 1	2	4	8	BANDWIDTH (BW) 1	2	4	8
12	1	0	0	0	1	1	0	0	0	0	0	1
18	1	1	0	0	0	0	1	0	1	0	1	0
24	1	1	1	0	0	0	1	0	1	0	1	0
30	0	0	1	1	0	0	1	0	0	1	1	0
36	0	0	1	1	1	0	1	0	1	0	1	0
42	0	0	1	1	1	0	1	0	0	1	1	0
48	0	0	1	1	0	1	1	0	0	1	1	0

CHART 14
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA H88 LOADED CABLE

Note: Set switches S1 and S2 to 1200; set the N/L switch to L.

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=18													
6	12	0	0	0	0	1	1	0	0	0	0	1	0
12	6	1	0	0	0	1	1	0	0	0	0	1	0
TL=24													
6	18	0	0	0	0	1	1	0	0	1	0	1	0
12	12	1	0	0	0	1	1	0	0	0	0	1	0
18	6	1	0	0	0	1	1	0	0	1	0	1	0
TL=30													
6	24	1	0	0	0	0	0	1	0	0	1	0	0
12	18	1	0	0	0	0	0	1	0	1	1	0	0
18	12	1	0	0	0	0	0	1	0	1	1	0	0
24	6	0	1	0	0	0	0	1	0	1	1	0	0
TL=36													
6	30	1	0	0	0	0	0	1	0	0	0	1	0
12	24	1	0	0	0	0	0	1	0	1	0	1	0
18	18	1	0	0	0	1	0	1	0	1	1	0	0
24	12	0	1	0	0	1	0	1	0	1	0	0	0
30	6	0	1	0	0	1	0	1	0	1	1	0	0
TL=42													
6	36	1	0	0	0	0	0	1	0	1	0	1	0
12	30	1	0	0	0	0	0	1	0	1	0	1	0
18	24	1	0	0	0	1	0	1	0	0	0	1	0
24	18	0	1	0	0	1	0	1	0	1	1	0	0
30	12	0	1	0	0	1	0	1	0	1	1	0	0
36	6	0	1	0	0	1	0	1	0	0	0	1	0
TL=48													
6	42	1	0	0	0	0	0	1	0	1	0	1	0
12	36	1	0	0	0	1	0	1	0	0	0	1	0
18	30	1	0	0	0	1	0	1	0	0	0	1	0
24	24	0	1	0	0	1	0	1	0	0	0	1	0

CHART 14 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA H88 LOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=48 (cont)													
30	18	0	1	0	0	1	0	1	0	1	1	0	0
36	12	0	1	0	0	1	0	1	0	1	1	0	0
42	6	1	1	0	0	0	1	1	0	0	1	0	0
TL=54													
6	48	1	0	0	0	1	0	1	0	0	0	1	0
12	42	1	0	0	0	1	0	1	0	0	0	1	0
18	36	1	0	0	0	1	0	1	0	1	0	1	0
24	30	0	1	0	0	1	0	1	0	0	0	1	0
30	24	0	1	0	0	0	1	1	0	0	1	0	0
36	18	0	1	0	0	0	1	1	0	1	1	0	0
42	12	1	1	0	0	0	1	1	0	0	1	0	0
48	6	1	1	0	0	0	1	1	0	1	1	0	0
TL=60													
6	54	1	0	0	0	1	0	1	0	0	0	1	0
12	48	1	0	0	0	1	0	1	0	1	0	1	0
18	42	1	0	0	0	0	1	1	0	1	1	0	0
24	36	0	1	0	0	0	1	1	0	1	1	0	0
30	30	0	1	0	0	0	1	1	0	1	1	0	0
36	24	0	1	0	0	0	1	1	0	1	1	0	0
42	18	1	1	0	0	0	1	1	0	1	1	0	0
48	12	1	1	0	0	0	1	1	0	1	1	0	0
54	6	0	1	0	0	1	1	1	0	0	0	1	0
TL=66													
6	60	1	0	0	0	1	0	1	0	1	0	1	0
12	54	1	0	0	0	0	1	1	0	0	0	1	0
18	48	1	0	0	0	0	1	1	0	0	0	1	0
24	42	0	1	0	0	0	1	1	0	1	1	0	0
30	36	0	1	0	0	0	1	1	0	0	0	1	0
36	30	0	1	0	0	0	1	1	0	0	0	1	0
42	24	1	1	0	0	1	1	1	0	0	1	0	0
48	18	1	1	0	0	1	1	1	0	0	1	0	0
54	12	0	0	1	0	1	1	1	0	0	1	0	0
60	6	0	0	1	0	1	1	1	0	1	1	0	0

CHART 14 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA H88 LOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=72													
6	66	1	0	0	0	0	1	1	0	0	0	1	0
12	60	1	0	0	0	0	1	1	0	0	0	1	0
18	54	0	1	0	0	0	1	1	0	0	0	1	0
24	48	0	1	0	0	0	1	1	0	0	0	1	0
30	42	0	1	0	0	0	1	1	0	0	0	1	0
36	36	0	1	0	0	1	1	1	0	1	1	0	0
42	30	0	1	0	0	1	1	1	0	1	1	0	0
48	24	0	1	0	0	1	1	1	0	1	1	0	0
54	18	0	0	1	0	1	1	1	0	0	0	1	0
60	12	0	0	1	0	1	1	1	0	0	0	1	0
TL=78													
6	72	1	0	0	0	0	1	1	0	0	0	1	0
12	66	1	0	0	0	0	1	1	0	1	0	1	0
18	60	0	1	0	0	0	1	1	0	0	0	1	0
24	54	0	1	0	0	1	1	1	0	1	1	0	0
30	48	0	1	0	0	1	1	1	0	1	1	0	0
36	42	1	1	0	0	1	1	1	0	1	1	0	0
42	36	1	1	0	0	1	1	1	0	1	1	0	0
48	30	1	1	0	0	1	1	1	0	1	1	0	0
TL=84													
6	78	1	0	0	0	0	1	1	0	0	0	1	0
12	72	1	0	0	0	0	1	1	0	1	0	1	0
18	66	0	1	0	0	1	1	1	0	1	1	0	0
24	60	0	1	0	0	1	1	1	0	1	1	0	0
30	54	0	1	0	0	1	1	1	0	1	1	0	0
36	48	1	1	0	0	1	1	1	0	1	1	0	0
42	42	1	1	0	0	1	1	1	0	1	1	0	0
TL=90													
6	84	1	0	0	0	1	1	1	0	1	1	0	0
12	78	0	1	0	0	1	1	1	0	1	1	0	0
18	72	0	1	0	0	1	1	1	0	1	1	0	0
24	66	0	1	0	0	1	1	1	0	1	1	0	0
30	60	1	1	0	0	1	1	1	0	1	1	0	0

CHART 14 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 24- AND 22-GA H88 LOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL= 96													
6	90	1	1	0	0	1	1	1	0	0	0	1	0
12	84	0	1	0	0	1	1	1	0	0	0	1	0
18	78	0	1	0	0	1	1	1	0	0	0	1	0
TL=102													
6	96	0	1	0	0	1	1	1	0	1	1	0	0

CHART 15
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA H88 LOADED CABLE

Note: Set switches S1 and S2 to 1200; set the N/L switch to L.

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=18													
6	12	1	0	0	0	1	1	0	0	0	1	0	0
12	6	0	1	0	0	1	1	0	0	0	1	1	0
TL=24													
6	18	1	0	0	0	0	1	0	0	0	0	1	0
12	12	0	1	0	0	1	1	0	0	1	0	1	0
18	6	1	0	1	0	0	0	1	0	1	0	1	0
TL=30													
6	24	1	0	0	0	1	1	0	0	0	0	1	0
12	18	0	1	0	0	0	0	1	0	1	0	1	0
18	12	0	0	1	0	0	0	1	0	0	0	1	0
24	6	1	0	0	1	1	0	1	0	0	0	1	0
TL=36													
6	30	1	0	0	0	0	0	1	0	0	0	1	0
12	24	1	0	0	0	0	0	1	0	0	1	1	0
18	18	1	1	0	0	1	0	1	0	0	0	1	0
24	12	1	1	1	0	1	0	1	0	1	1	0	0
30	6	0	0	1	1	1	0	1	0	1	0	1	0
TL=42													
6	36	1	0	0	0	0	0	1	0	1	0	1	0
12	30	1	0	0	0	0	0	1	0	1	1	1	0
18	24	1	1	0	0	1	0	1	0	1	0	1	0
24	18	0	1	1	0	1	0	1	0	0	0	1	0
30	12	0	0	1	1	1	0	1	0	0	1	1	0
36	6	0	1	1	1	1	0	1	0	0	1	1	0
TL=48													
6	42	1	0	0	0	0	0	1	0	1	0	1	0
12	36	1	0	0	0	0	0	1	0	1	1	1	0
18	30	0	1	0	0	1	0	1	0	0	1	1	0
24	24	1	0	1	0	1	0	1	0	1	0	1	0
30	18	1	1	0	1	1	0	1	0	1	0	1	0
36	12	0	0	1	1	0	1	1	0	0	0	1	0

CHART 15 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA H88 LOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=54													
6	48	1	0	0	0	1	0	1	0	0	0	1	0
12	42	0	1	0	0	1	0	1	0	1	0	1	0
18	36	1	1	0	0	1	0	1	0	0	1	1	0
24	30	0	1	1	0	0	1	1	0	0	0	1	0
30	24	1	0	1	1	0	1	1	0	0	0	1	0
36	18	0	0	1	1	0	1	1	0	0	0	1	0
TL=60													
6	54	1	0	0	0	1	0	1	0	0	0	1	0
12	48	0	1	0	0	1	0	1	0	1	0	1	0
18	42	0	0	1	0	0	1	1	0	0	0	1	0
24	36	1	1	1	0	0	1	1	0	0	0	1	0
30	30	1	0	0	1	0	1	1	0	1	0	1	0
TL=66													
6	60	1	0	0	0	1	0	1	0	1	0	1	0
12	54	0	1	0	0	1	0	1	0	0	1	1	0
18	48	1	1	0	0	0	1	1	0	1	0	1	0
24	42	0	1	1	0	0	1	1	0	1	0	1	0
30	36	0	0	1	1	0	1	1	0	1	0	1	0
TL=72													
6	66	1	0	0	0	0	1	1	0	0	0	1	0
12	60	0	1	0	0	1	0	1	0	1	0	1	0
18	54	0	0	1	0	0	1	1	0	1	0	1	0
24	48	1	1	1	0	0	1	1	0	1	0	1	0
TL=78													
6	72	1	0	0	0	0	1	1	0	0	0	1	0
12	66	0	1	0	0	1	0	1	0	0	1	1	0
18	60	1	0	1	0	0	1	1	0	1	0	1	0

CHART 15 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 22-GA H88 LOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
24-GA	22-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=84													
6	78	1	0	0	0	0	1	1	0	1	0	1	0
12	72	1	1	0	0	0	1	1	0	1	0	1	0
18	66	1	0	1	0	1	1	1	0	0	0	1	0
TL=90													
6	84	1	0	0	0	0	1	1	0	1	0	1	0
12	78	1	1	0	0	1	1	1	0	0	0	1	0
TL=96													
6	90	0	1	0	0	1	1	1	0	1	1	0	0

CHART 16
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 24-GA H88 LOADED CABLE

Note: Set switches S1 and S2 to 1200; set the N/L switch to L.

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	24-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=12													
6	6	1	0	0	0	1	1	0	0	1	1	1	0
TL=18													
6	12	0	1	0	0	1	1	0	0	0	0	1	0
12	6	1	1	0	0	1	1	0	0	0	1	1	0
TL=24													
6	18	0	1	0	0	1	1	0	0	0	0	1	0
12	12	1	1	0	0	0	0	1	0	0	0	1	0
18	6	0	1	1	0	0	0	1	0	1	0	1	0
TL=30													
6	24	0	1	0	0	0	0	1	0	0	0	1	0
12	18	1	1	0	0	0	0	1	0	1	0	1	0
18	12	0	1	1	0	1	0	1	0	1	1	0	0
24	6	0	0	1	1	1	0	1	0	0	0	1	0
TL=36													
6	30	0	1	0	0	1	0	1	0	0	0	1	0
12	24	1	1	0	0	1	0	1	0	1	0	1	0
18	18	0	1	1	0	1	0	1	0	0	0	1	0
24	12	0	0	1	1	1	0	1	0	0	0	1	0
30	6	0	0	1	1	1	0	1	0	1	0	1	0
TL=42													
6	36	1	1	0	0	1	0	1	0	0	0	1	0
12	30	0	0	1	0	1	0	1	0	1	0	1	0
18	24	0	1	1	0	1	0	1	0	1	0	1	0
24	18	1	1	0	1	1	0	1	0	1	0	1	0
30	12	0	0	1	1	0	1	1	0	0	0	1	0
36	6	0	0	1	1	1	0	1	0	0	1	1	0

CHART 16 (CONT)
EQUALIZER PRESCRIPTION SETTINGS
MIXED 26- AND 24-GA H88 LOADED CABLE

CABLE LENGTH (KFT)		EQUALIZER SETTINGS											
		SLOPE (SL)				HEIGHT (HT)				BANDWIDTH (BW)			
26-GA	24-GA	1	2	4	8	1	2	4	8	1	2	4	8
TL=48													
6	42	1	1	0	0	1	1	0	0	0	1	1	0
12	36	1	0	1	0	0	1	1	0	0	0	1	0
18	30	0	0	0	1	0	1	1	0	0	0	1	0
24	24	0	0	1	1	0	1	1	0	0	0	1	0
30	18	0	0	1	1	0	1	1	0	0	0	1	0
36	12	0	0	1	1	0	1	1	0	1	0	1	0
TL=54													
6	48	0	0	1	0	0	1	1	0	1	1	0	0
12	42	0	1	1	0	0	1	1	0	0	0	1	0
18	36	1	1	1	0	0	1	1	0	1	0	1	0
24	30	0	0	1	1	0	1	1	0	1	0	1	0
30	24	0	0	1	1	0	1	1	0	1	0	1	0
TL=60													
6	54	0	0	1	0	1	1	1	0	1	1	0	0
12	48	1	1	1	0	1	1	1	0	1	1	0	0
18	42	0	0	1	1	1	1	1	0	1	1	0	0
TL=66													
6	60	1	0	1	0	1	1	1	0	1	1	0	0

EXAMPLE A (2WFXS/EVF and 2WDX):

Transmit: 0-dBm0 level is −10.5 dBm, with NO TX switches selected. Input range is +6.0 to −10.5 dBm, adjustable in 0.1-dB steps. To select for an input in this range, add 10.5 to the desired 0-dBm0 level and select the combination of TX switches that add to give this attenuation.

Receive: 0-dBm0 level is +6.0 dBm, with NO RX switches selected. Output range is +6.0 to −9.0 dBm, adjustable in 0.1-dB steps. To select for an output in this range, subtract 6.0 from desired 0-dBm0 level and select the combination of RX switches that add to give this attenuation.

Sample: Desired Transmit level = +1.5 dBm (+1.5 plus 10.5 = 12.0), set TX 4, 8.
Desired Receive level = −2.5 dBm (−2.5 minus 6.0 = −8.5), set RX 8, .1, .4.

EXAMPLE B (ETS-4):

Transmit: 0-dBm0 level is −16.0 dBm, with NO TX switches selected. Input range is +0.5 to −16.0 dBm, adjustable in 0.1-dB steps. To select for an input in this range, add 16.0 to the desired 0-dBm0 level and select the combination of TX switches that add to give this attenuation.

Receive: 0-dBm0 level is +7.0 dBm, with NO RX switches selected. Output range is +7.0 to −9.5 dBm, adjustable in 0.1-dB steps. To select for an output in this range, subtract 7.0 from desired 0-dBm0 level and select the combination of RX switches that add to give this attenuation.

Sample: Desired Transmit level = −14.5 dBm (−14.5 plus 16.0 = +1.5), set TX 1, .4, .1.
Desired Receive level = +5.2 dBm (+5.2 minus 7.0 = −1.8), set RX 1, .8.

EXAMPLE C:

Transmit: 0-dBm0 level is −22.0 dBm, with NO TX switches selected. Input range is +9.0 to −23.5 dBm, adjustable in 0.1-dB steps. To select for an input in this range, add 22.0 to the desired 0-dBm0 level and select the combination of TX switches that add to give this attenuation.

Receive: 0-dBm0 level is +9.0 dBm, with NO RX switches selected. Output range is +10.5 to −22.0 dBm, adjustable in 0.1-dB steps. To select for an output in this range, subtract 9.0 from desired 0-dBm0 level and select the combination of RX switches that add to give this attenuation.

Sample: Desired Transmit level = −17.5 dBm (−17.5 plus 22.0 = +4.5), set TX 4, .5.
Desired Receive level = +7.9 dBm (+7.9 minus 9.0 = −1.1), set RX 2, .1, .8.

EXAMPLE D (4WTDM):

Transmit: 0-dBm0 level is −2.1 dBm, with NO TX switches selected. Input range is −2.1 to −3.6 dBm, adjustable in 0.1-dB steps. To select for an input in this range, add 2.1 to the desired 0-dBm0 level and select the combination of TX switches that add to give this attenuation.

Receive: 0-dBm0 level is −2.1 dBm, with NO RX switches selected. Output range is −0.6 to −2.1 dBm, adjustable in 0.1-dB steps. To select for an output in this range, subtract 0.6 from desired 0-dBm0 level and select the combination of RX switches that add to give this attenuation.

Sample: Desired Transmit level = −2.7 dBm (−2.7 plus 2.1 = +0.6), set TX .2, .4.
Desired Receive level = −1.7 dBm (−1.7 minus 0.6 = −1.1), set RX .1, .2, .8.

EXAMPLE E (4WPLR for EM Operation):

Transmit: 0-dBm0 level is – 16.0 dBm, with NO TX switches selected. Input range is – 17.5 to – 16.0 dBm, adjustable in 0.1-dB steps. To select for an input in this range, add 17.5 to the desired 0-dBm0 level and select the combination of TX switches that add to give this attenuation.

Receive: 0-dBm0 level is + 7.0 dBm, with NO RX switches selected. Output range is + 7.0 to + 8.5 dBm, adjustable in 0.1-dB steps. To select for an output in this range, subtract 7.0 from desired 0-dBm0 level and select the combination of RX switches that add to give this attenuation.

Sample: Desired Transmit level = – 16.8 dBm (– 16.8 plus 16.0 = + 0.8), set TX .8.
Desired Receive level = + 8.2 dBm (+ 8.2 minus 7.0 = – 1.2), set RX .4, .8.

EXAMPLE F (4WPLR for PLR Operation):

Transmit: 0-dBm0 level is + 7.0 dBm, with NO TX switches selected. Input range is + 7.0 to + 5.5 dBm, adjustable in 0.1-dB steps. To select for an input in this range, subtract 7.0 to the desired 0-dBm0 level and select the combination of TX switches that add to give this attenuation.

Receive: 0-dBm0 level is – 16.0 dBm, with NO RX switches selected. Output range is – 14.5 to – 16.0 dBm, adjustable in 0.1-dB steps. To select for an output in this range, add 16.0 to desired 0-dBm0 level and select the combination of RX switches that add to give this attenuation.

Sample: Desired Transmit level = + 6.2 dBm (+ 6.2 minus 7.0 = – 0.8), set TX .8.
Desired Receive level = – 15.2 dBm (– 15.2 plus 16.0 = + 0.8), set RX .8.

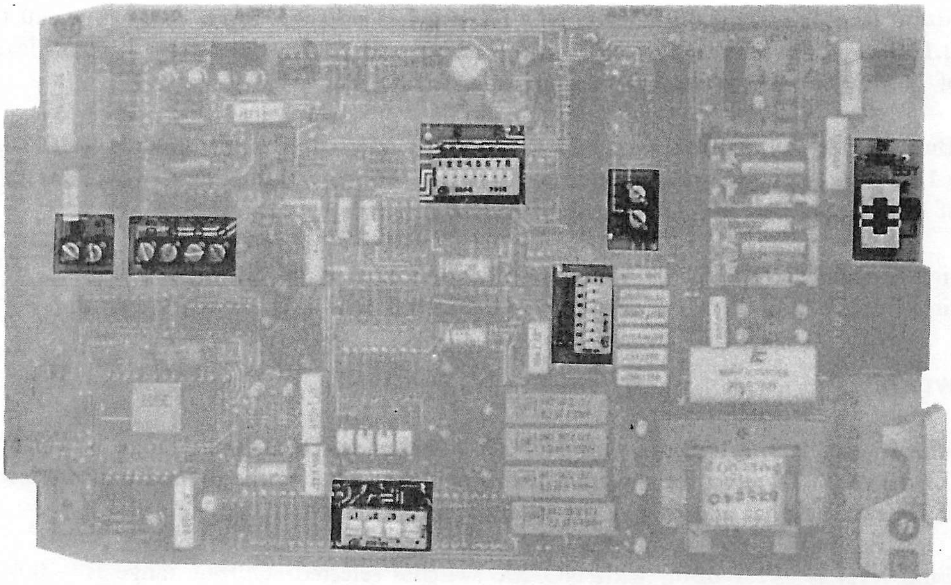


Fig. 1—2WFXS/EVF Channel Unit, 628192, Option Locations

TABLE B

2WFXS/EVF CHANNEL UNIT, 628192, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[CN]*		Selects compromise network of 900 ohms + 2.16 uF.	Network Build-Out DIP Switch Options
[2], [4], [8], [16], [32], [64]		Provides build-out capacitance of .002 to .126 uF in .002 uF steps.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1 dB steps.	Level DIP Switch Options
[TX] +1,* +2, +4, +8*		Provides from 0 to 15 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1,* −2, −4, −8*		Provides from 0 to 15 dB of loss for RX VF levels in 1-dB steps.	
[BF]**		Busies far end (only when BSY switch is selected).	BSY Switch Option (0-ohm Resistor Strap)
[LS]		Conditions for loop-start operation. (When UP, unit is conditioned for ground-start.)	Loop-/Ground-Start Signaling Conditioning
[LL1]	**[LL2]**		Extended Loop Conditioning
DN	DN	Conditions for long loops, over 900 ohms.	
UP	UP	Conditions for short loops, under 600 ohms.	
UP or DN	UP or DN	Conditions for loops of 600 to 900 ohms.	
[D2]†	**[D3]*†**		Signaling Lead Conditioning
DN	UP	Conditions channel for D2-type signaling.	
UP*	DN*	Conditions channel for D1D/D3-type signaling.	
[BB]*		After 2.5 or 10 seconds (optional) delay from CGA, ground applied to subscriber TIP lead. (When UP, ground application inhibited.)	CGA Option

*Option is factory selected.

**Removal of strap inhibits function when BSY switch is selected (UP).

†The unit is equipped with two identical option screws for this function. When this option is required, both option screws must be selected.

TABLE C

4WTO CHANNEL UNIT, 628200, OPTIONS

OPTION	DESCRIPTION	OPTION FUNCTION
[RX]/[TX] .1, .2, .4, .8	Provides from 0 to 1.5 dB of compensation for OWL in .1 dB steps.	Level DIP Switch Options
[TX] +1, +2*, +4,* +8, +16	Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8, −16	Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	

*Option is factory selected.

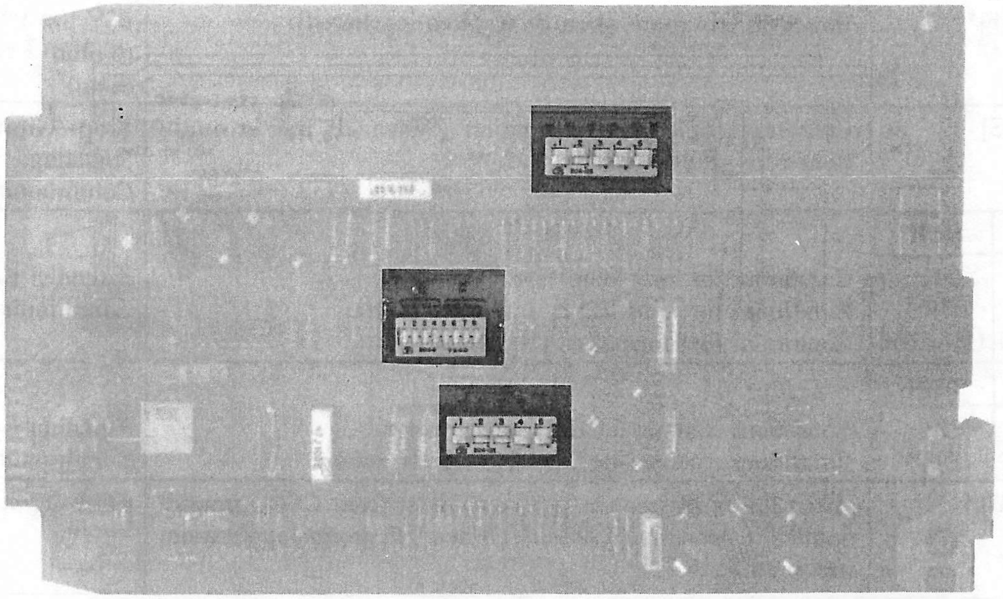


Fig. 2—4WTO Channel Unit, 628200, Option Locations

TABLE D

4WTO/SF CHANNEL UNIT, 628205, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8, +16		Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8, −16		Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[EG]	**[K]**		
UP	UP	E to EB loop opened on CGA.	CGA Screw-Down Options
UP	DN	E to EB loop opened on CGA, E lead grounded.	
DN	UP	E to EB loop opened on CGA, E lead grounded after 2.5 or 10 seconds (optional) delay.	
[BN]**		Busies near end (opens E to EB loop and grounds E lead) when BSY switch is selected.	BSY Switch Option (0-ohm Resistor Strap)

*Option is factory selected.
**Removal of strap inhibits function when BSY switch is selected (UP).

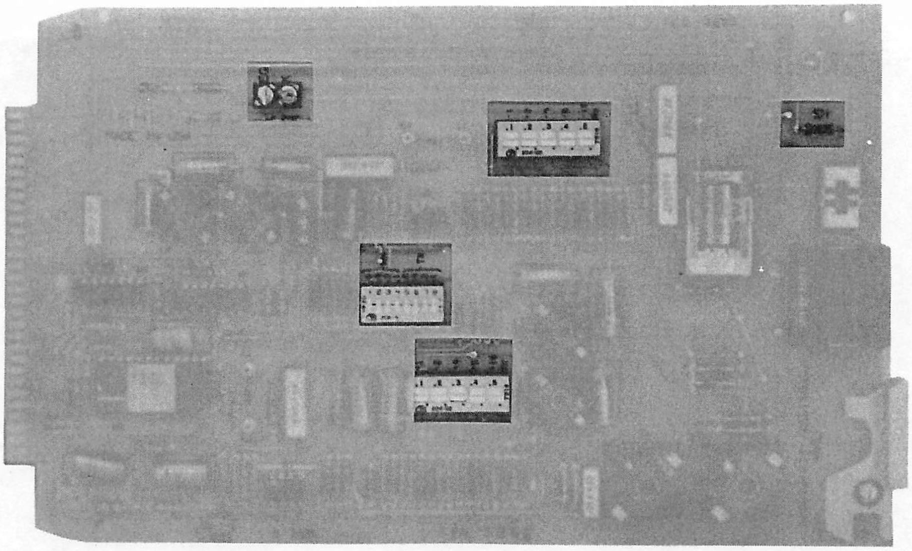


Fig. 3—4WTO/SF Channel Unit, 628205, Option Locations

TABLE E

4WETO CHANNEL UNIT, 628210, OPTIONS

OPTION	DESCRIPTION	OPTION FUNCTION
[TX] 150, 600,* 1200	Provides TX matching impedance of 150, 600, or 1200 ohms.	Impedance Matching DIP Switch Options
[RX], 150, 600,* 1200	Provides RX matching impedance of 150, 600, or 1200 ohms.	
[RX]/[TX] .1, .2, .4, .8	Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8, +16	Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8, −16	Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[N]*/[L]	Compensates for frequency response effects of long loaded or nonloaded lines — see Appendix A.	VF Equalizer DIP Switch Options
[SL]** 1, 2, 4, 8		
[HT]** 1, 2, 4, 8		
[BW]** 1, 2, 4, 8		

*Option is factory selected.
**[SL] = Slope; [HT] = Height; [BW] = Bandwidth.

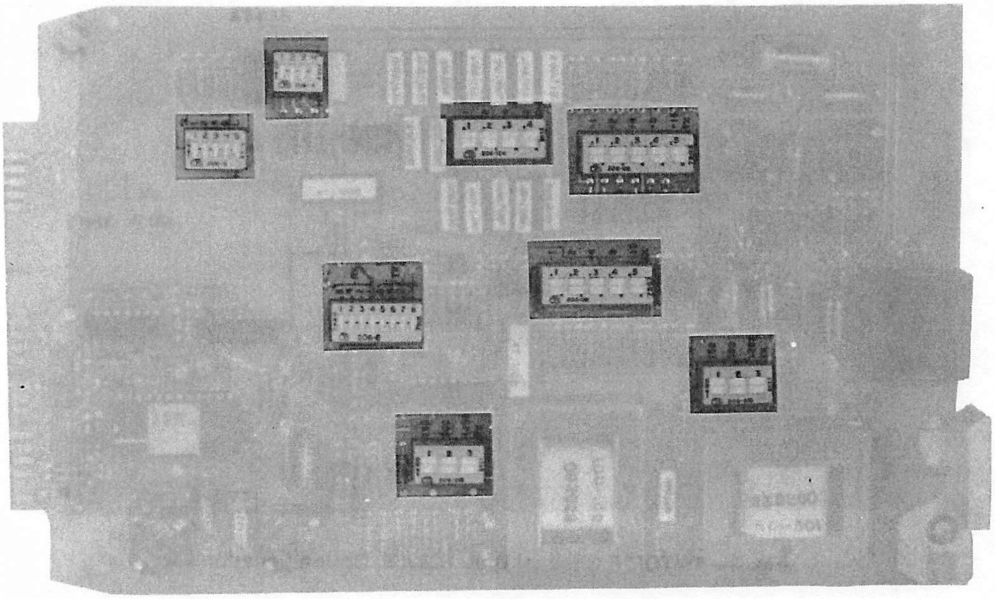


Fig. 4—4WETO Channel Unit, 628210, Option Locations

TABLE F
4WPLR CHANNEL UNIT, 628220, OPTIONS

OPTION			DESCRIPTION	OPTION FUNCTION
[VF] EM/PLR*			Conditions VF path for EM or PLR operation (in PLR position, changes VF levels for back-to-back operation).	EM/PLR Switch Options
[E] EM/PLR,* [M] EM/PLR*			Conditions E/EB and M/MB leads for EM or PLR operation (in PLR position, conditions E/EB and M/MB leads for interface with an E&M unit).	
[E1-1]	**[E1-2]**			
UP	UP		Idle-open, busy-loop (with [E] EM/PLR in either EM or PLR position).	E/EB Lead Screw-Down Options
UP	DN		Idle-open, busy-battery (with [E] EM/PLR in PLR position).	
UP or DN	DN		Idle-open, busy-ground (with [E] EM/PLR in EM position).	
DN*	DN*		Idle-ground, busy-battery (with [E] EM/PLR in PLR position).	
[RX]/[TX] .1, .2, .4, .8			Select singly or in combination to provide from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[EG]	**[W]**	**[K]**		
UP	UP	UP	Idle on CGA.	CGA Screw-Down Options
UP	UP	DN	Busy on CGA.	
DN	UP	UP	Idle on CGA, busy after 2.5 or 10 seconds (optional) delay.	
UP	DN	UP	Busy on CGA with 70 ms wink open after 2.5 or 10 seconds (optional) delay. After wink, remains busy until CGA is cleared.	
[BF]**			Busies far end (only when BSY switch is operated).	BSY Switch Options (0-ohm Resistor Strap)
[BN]**			Busies near end (busies E lead and grounds OS lead) only when BSY switch is operated.	

*Option is factory selected.
**Removal of strap inhibits function when BSY switch is selected (UP).

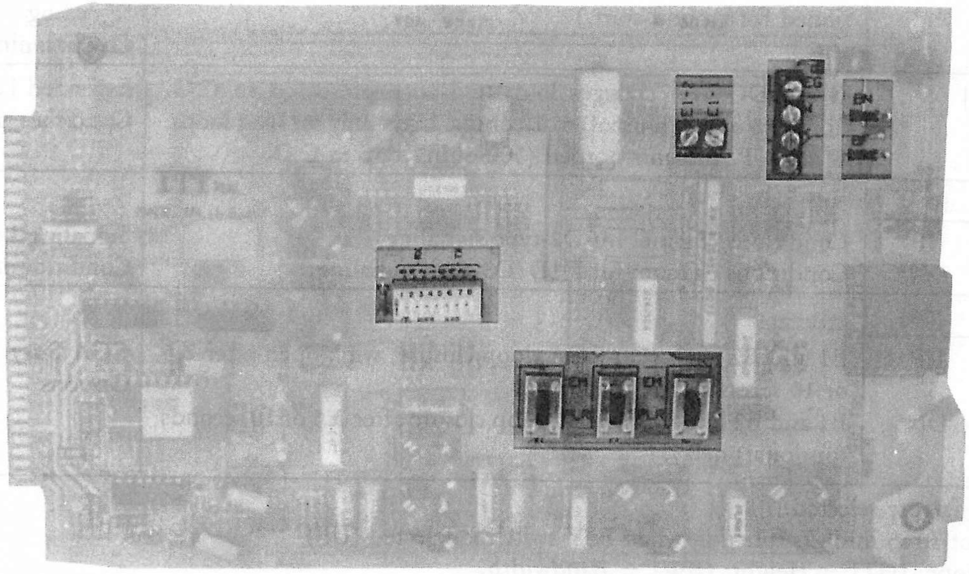


Fig. 5—4WPLR Channel Unit, 628220, Option Locations

TABLE G

4WFXO/VF CHANNEL UNIT, 628230, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[TX] 150, 600,* 1200		Provides TX matching impedance of 150, 600, or 1200 ohms.	Impedance Matching DIP Switch Options
[RX], 150, 600,* 1200		Provides RX matching impedance of 150, 600, or 1200 ohms.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8, +16		Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] 1, −2,* −4, −8, −16		Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[N]*/[L]		Compensates for frequency response effects of long loaded or nonloaded lines — see Appendix A.	VF Equalizer DIP Switch Options
[SL]† 1, 2, 4, 8			
[HT]† 1, 2, 4, 8			
[BW]† 1, 2, 4, 8			
[NOR]‡	**[REV]‡**		
DN*	UP	Provides for normal operation.	Normal/Reverse TSX/RSX Conditioning
UP	DN	Provides for reverse operation (reverses TSX and RSX leads for back-to-back operation).	
[BF]**		Busies far end (only when BSY switch is selected) by sending tip ground to far end.	BSY Switch Option (0-ohm Resistor Strap)
[G]*		B2 lead grounded. Loop closure (B1-B2) applies ground to B1 lead. Removal of strap removes B2 ground to allow use of external ground.	CGA Option (0-ohm Resistor Strap)
[LS]		Conditions for loop-start operation. (When UP, unit is conditioned for ground-start.)	Loop-/Ground-Start Signaling Conditioning
[LX]		When DOWN, changes loop resistance presented to C.O. from 500 ohms (normal) to 10 ohms. Used only for long loops. When UP, presents normal (500-ohm) loop to C.O.	Extended Loop Conditioning
[D2]‡	**[D3]‡**		
DN	UP	Conditions channel for D2-type signaling.	Signaling Lead Conditioning
UP	DN*	Conditions channel for D1D/D3-type signaling.	
[W]	**[EG]**		
DN	UP	B1 and B2 leads: On CGA, loop closure, wink open after 2.5 or 10 seconds (optional) delay.	CGA Busy Lead Options
UP	DN	B1 and B2 leads: On CGA, loop closure after 2.5 or 10 seconds (optional) delay.	

*Option is factory selected.

**Removal of strap inhibits function when BSY switch is selected (UP).

†[SL] = Slope; [HT] = Height; [BW] = Bandwidth.

‡The unit is equipped with two identical option screws for this function. When this option is required, both option screws must be selected.

TABLE G (CONT)

OPTION		DESCRIPTION	OPTION FUNCTION
[RG]	[LC]		
DN	UP	Ring-GROUND: 2.5 or 10 seconds (optional) delay after CGA.	Loop-/Ground-Start CGA Conditioning
UP	DN	Loop closure 2.5 or 10 seconds (optional) delay after CGA.	

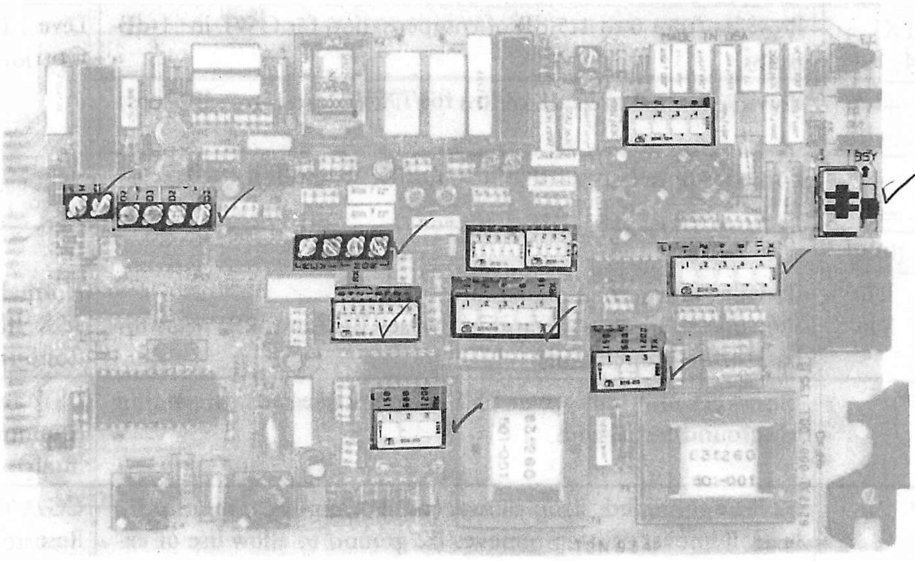


Fig. 6—4WFXO/VF Channel Unit, 628230, Option Locations

TABLE H

4WFXO CHANNEL UNIT, 628235, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[TX] 150, 600,* 1200		Provides TX matching impedance of 150, 600, or 1200 ohms.	Impedance Matching DIP Switch Options
[RX], 150, 600,* 1200		Provides RX matching impedance of 150, 600, or 1200 ohms.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8, +16		Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8, −16		Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[NOR]†	**[REV]†**		
DN*	UP	Provides for normal operation.	Normal/Reverse TSX/RSX Conditioning
UP	DN	Provides for reverse operation (reverses TSX and RSX leads for back-to-back operation).	
[BF]**		Busies far end (only when BSY switch is selected) by sending tip ground to far end.	BSY Switch Option (0-ohm Resistor Strap)
[G]*		B2 lead grounded. Loop closure (B1-B2) applies ground to B1 lead. Removal of strap removes B2 ground to allow use of external ground.	CGA Option (0-ohm Resistor Strap)
[LS]		Conditions for loop-start operation. (When UP, unit is conditioned for ground-start.)	Loop-/Ground-Start Signaling Conditioning
[LX]		When DOWN, changes loop resistance presented to C.O. from 500 ohms (normal) to 10 ohms. Used only for long loops. When UP, presents normal (500-ohm) loop to C.O.	Extended Loop Conditioning
[D2]†	**[D3]†**		
DN	UP	Conditions channel for D2-type signaling.	Signaling Lead Conditioning
UP	DN*	Conditions channel for D1D/D3-type signaling.	
[W]	**[EG]**		
DN	UP	B1 and B2 leads: On CGA, loop closure, wink open after 2.5 or 10 seconds (optional) delay.	CGA Busy Lead Options
UP	DN	B1 and B2 leads: On CGA, loop closure after 2.5 or 10 seconds (optional) delay.	
[RG]	**[LC]**		
DN	UP	Ring-GROUND: 2.5 or 10 seconds (optional) delay after CGA.	Loop-/Ground-Start CGA Conditioning
UP	DN	Loop closure 2.5 or 10 seconds (optional) delay after CGA.	

*Option is factory selected.

**Removal of strap inhibits function when BSY switch is selected (UP).

†The unit is equipped with two identical option screws for this function. When this option is required, both option screws must be selected.

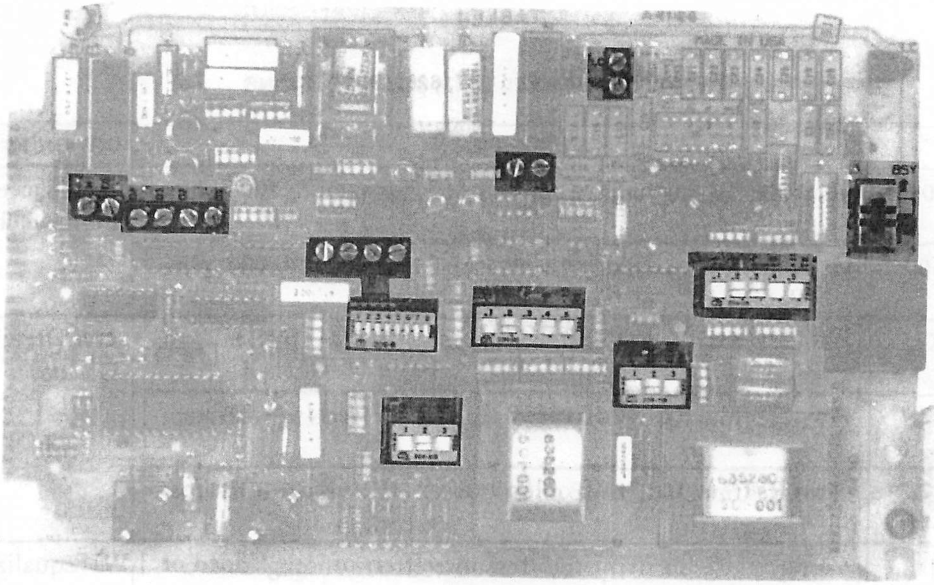


Fig. 7—4WFXO Channel Unit, 628235, Option Locations

TABLE I

4WFXS/VF CHANNEL UNIT, 628240, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[TX] 150, 600,* 1200		Provides TX matching impedance of 150, 600, or 1200 ohms.	Impedance Matching DIP Switch Options
[RX], 150, 600,* 1200		Provides RX matching impedance of 150, 600, or 1200 ohms.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8, +16		Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8, −16		Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[N]*/[L]		Compensates for frequency response effects of long loaded or nonloaded lines — see Appendix A.	VF Equalizer DIP Switch Options
[SL]† 1, 2, 4, 8			
[HT]† 1, 2, 4, 8			
[BW]† 1, 2, 4, 8			
[NOR]‡	**[REV]‡**		
DN*	UP	Provides for normal operation.	Normal/Reverse TSX/RSX Conditioning
UP	DN	Provides for reverse operation (reverses TSX and RSX leads for back-to-back operation).	
[D2]‡	**[D3]‡**		
DN	UP	Conditions channel for D2-type signaling.	Signaling Lead Conditioning
UP	DN*	Conditions channel for D1D/D3-type signaling.	
[BF]**		Busies far end (only when BSY switch is selected).	BSY Switch Option (0-ohm Resistor Strap)
[LS]		Conditions for loop-start operation. (When UP, unit is conditioned for ground-start.)	Loop-/Ground-Start Signaling Conditioning
[BB]*		After 2.5 or 10 seconds (optional) delay after CGA, ground applied to subscriber TIP lead. (When UP, ground application inhibited.)	CGA Option

*Option is factory selected.

**Removal of strap inhibits function when BSY switch is selected (UP).

†[SL] = Slope; [HT] = Height; [BW] = Bandwidth.

‡The unit is equipped with two identical option screws for this function. When this option is required, both option screws must be selected.

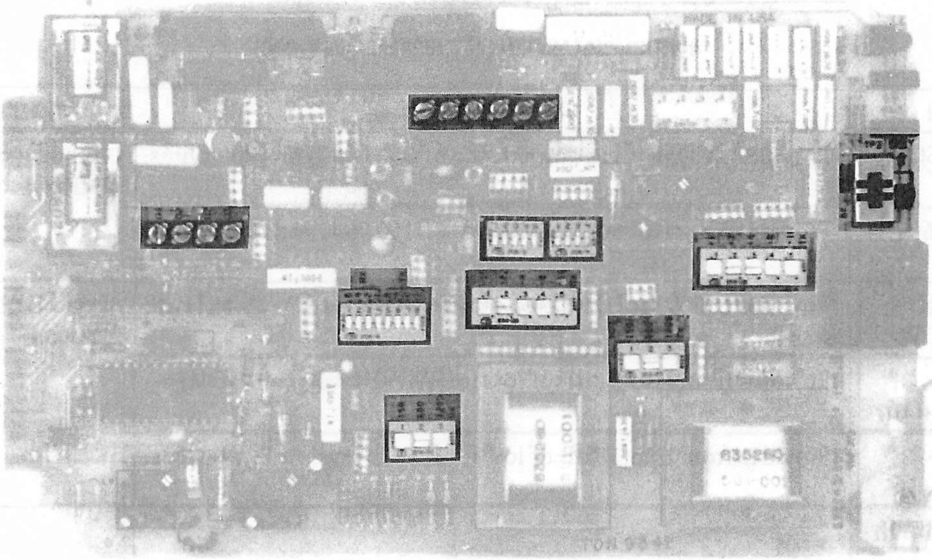


Fig. 8—4WFXS/VF Channel Unit, 628240, Option Locations

TABLE J

4WFXS CHANNEL UNIT, 628245, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[TX] 150, 600,* 1200		Provides TX matching impedance of 150, 600, or 1200 ohms.	Impedance Matching DIP Switch Options
[RX], 150, 600,* 1200		Provides RX matching impedance of 150, 600, or 1200 ohms.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8, +16		Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8, −16		Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[NOR]†	**[REV]†**		
DN*	UP	Provides for normal operation.	Normal/Reverse TSX/RSX Conditioning
UP	DN	Provides for reverse operation (reverses TSX and RSX leads for back-to-back operation).	
[D2]†	**[D3]†**		
DN	UP	Conditions channel for D2-type signaling.	Signaling Lead Conditioning
UP	DN*	Conditions channel for D1D/D3-type signaling.	
[BF]**		Busies far end (only when BSY switch is selected).	BSY Switch Option (0-ohm Resistor Strap)
[LS]		Conditions for loop-start operation. (When UP, unit is conditioned for ground-start.)	Loop-/Ground-Start Signaling Conditioning
[BB]*		After 2.5 or 10 seconds (optional) delay after CGA, ground applied to subscriber TIP lead. (When UP, ground application inhibited.)	CGA Option

*Option is factory selected.

**Removal of strap inhibits function when BSY switch is selected (UP).

†The unit is equipped with two identical option screws for this function. When this option is required, both option screws must be selected.

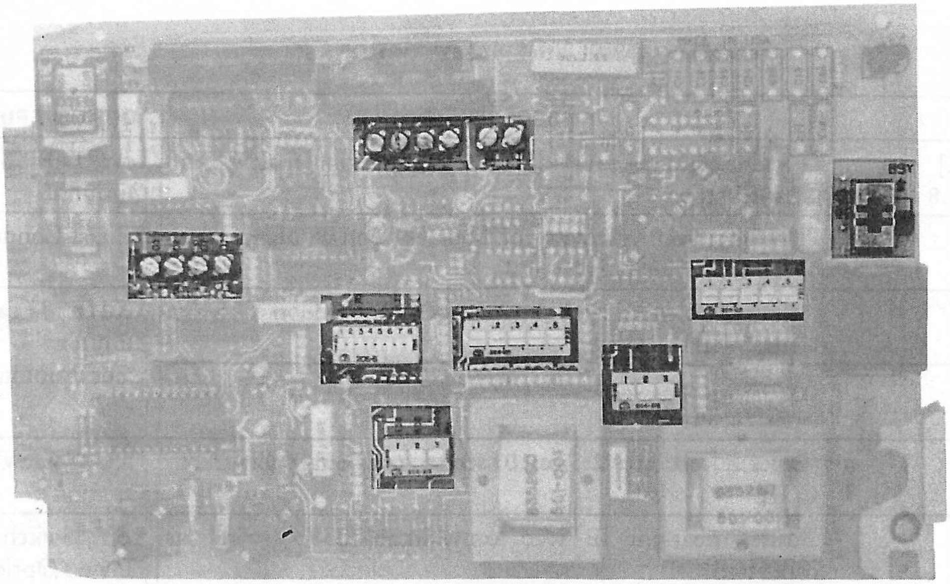


Fig. 9—4WFXS Channel Unit, 628245, Option Locations

TABLE K

ETS-4 CHANNEL UNIT, 628255, OPTIONS

OPTION*	DESCRIPTION	OPTION FUNCTION
[TX] +1, +2, +4, +8, .1, .2, .4, .8	Use in combination to provide from 0 to 16.5 dB of attenuation for TX VF levels in 0.1-dB steps.	Level DIP Switch Options
[RX] −1, −2, −4, −8, .1, .2, .4, .8	Use in combination to provide from 0 to 16.5 dB of attenuation for RX VF levels in 0.1-dB steps.	

*Units shipped with no options selected.

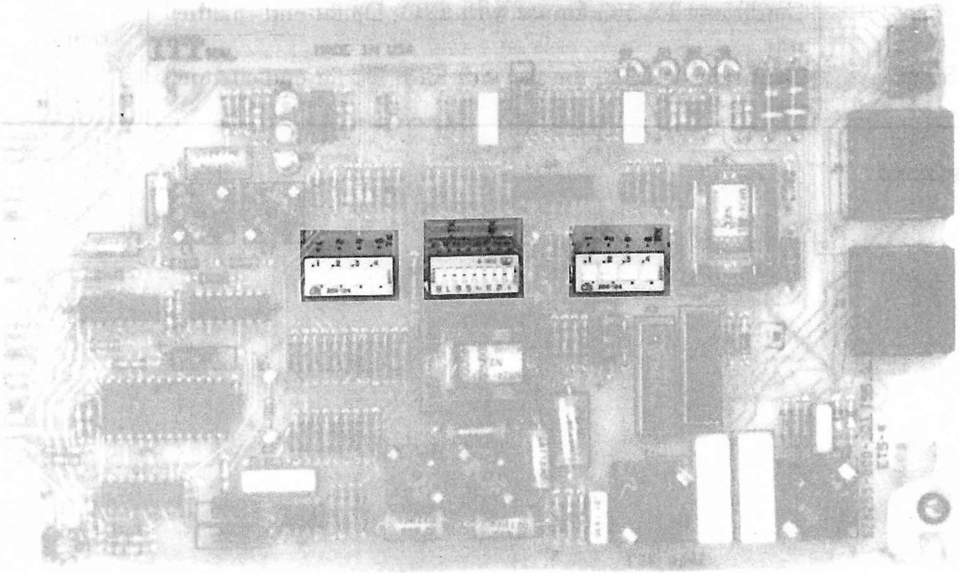


Fig. 10—ETS-4 Channel Unit, 628255, Option Locations

TABLE L

4WTDM CHANNEL UNIT, 628260, OPTIONS

OPTION					DESCRIPTION	OPTION FUNCTION
[TX]/[RX] .1, .2, .4, .8					Provides from 0 to 1.5 dB of compensation for OWL in 0.1-dB steps.	Level DIP Switch Options
[E]*					Places ground on E lead when busy. When UP, places loop on E lead when busy.	E-Lead Conditioning
[V]*					Allows EX1 lead signaling to be simplexed on RX VF leads, when selected.	EX1/E1-Lead Simplex Conditioning
[W]*					Allows E1 lead signaling to be simplexed on TX VF leads, when selected.	
[EG]					Busies E lead after 2.5 or 10 second (optional) delay from CGA.	CGA Screw-Down Option
[TA]*					Busies near-end E lead (only when BSY switch is operated).	BSY Switch Screw-Down Options
[TC]*					Busies far-end E lead (only when BSY switch is operated).	
[R]	[S]	[T]	[D3T]	[D2T]		
DN	DN	UP	Strap	Open	Conditions TX SIG for use with far-end channel units of all types (2-state signaling), except FXO and FXS.	TX SIG Conditioning
UP	DN*	UP	Strap*	Open	Conditions TX SIG for use with far-end FXO, D3, or FXS, D2 channel unit.	
UP	DN	UP	Open	Strap	Conditions TX SIG for use with far-end FXO, D2 channel unit.	
UP	UP	DN	Strap	Open	Conditions TX SIG for use with far-end FXS, D3 channel unit.	
[Y]	[Z]	[D3R]	[D2R]			
UP	DN*	Strap*	Open		Conditions RX SIG for use with all 2-state signaling, FXO, D2, and FXS, D3 far-end channel units.	RX SIG Conditioning
DN	UP	Strap	Open		Conditions RX SIG for use with FXO, D3 far-end channel unit.	
UP	DN	Open	Strap		Conditions RX SIG for use with FXS, D2 far-end channel unit.	

*Option is factory selected.

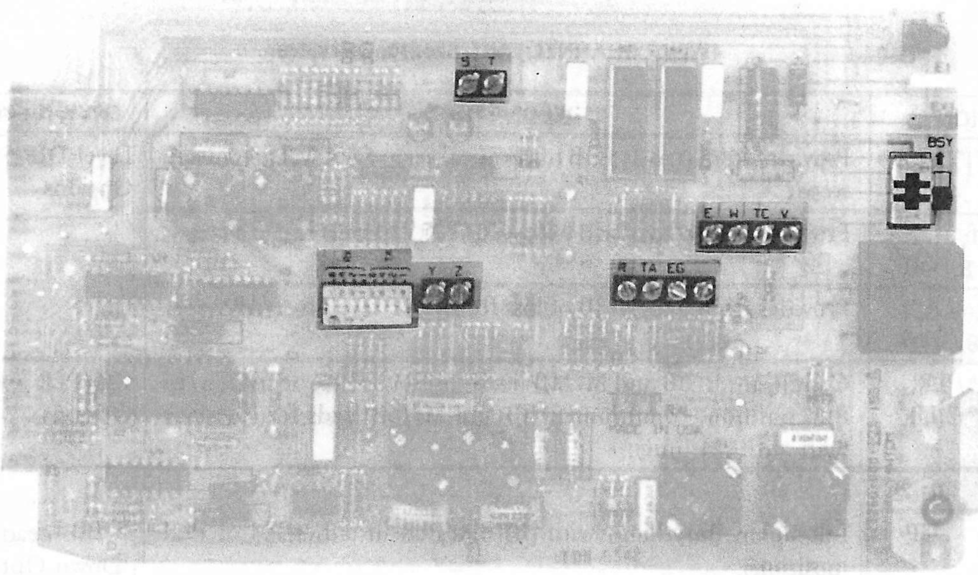

S
T
BSY
E
W
TC
V
Y
Z
R
TA
EG

Fig. 11—4WTDM Channel Unit, 628260, Option Locations

TABLE M

4WEVF CHANNEL UNIT, 628270, OPTIONS

<table>
<tr><th colspan="6">OPTION</th><th>DESCRIPTION</th><th>OPTION FUNCTION</th></tr>
<tr><td colspan="6">[RX]/[TX]
.1, .2, .4, .8</td><td>Provides from 0 to 1.5 dB of compensation for OWL in 0.1-dB steps.</td><td>Level DIP Switch Options</td></tr>
<tr><td colspan="6">[TX] +1, +2,* +4,* +8, +16</td><td>Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.</td><td></td></tr>
<tr><td colspan="6">[RX] 1, −2,* −4, −8, −16</td><td>Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.</td><td></td></tr>
<tr><td colspan="6">[E] EM*/PLR,
[M] EM*/PLR</td><td>Conditions E/EB and M/MB leads for EM or PLR operation (in PLR position, conditions E/EB and M/MB leads for interface with an E&M unit).</td><td>EM/PLR Switch Options</td></tr>
<tr><td colspan="3">[E1-1]</td><td colspan="3">[E1-2]</td><td></td><td></td></tr>
<tr><td colspan="3">UP</td><td colspan="3">UP</td><td>Idle-open, busy-loop (with [E] EM/PLR in either EM or PLR position).</td><td>E/EB Lead Screw-Down Options</td></tr>
<tr><td colspan="3">UP</td><td colspan="3">DN</td><td>Idle-open, busy-battery (with [E] EM/PLR in PLR position).</td><td></td></tr>
<tr><td colspan="3">UP or DN</td><td colspan="3">DN</td><td>Idle-open, busy-ground (with [E] EM/PLR in EM position).</td><td></td></tr>
<tr><td colspan="3">DN*</td><td colspan="3">DN*</td><td>Idle-ground, busy-battery (with [E] EM/PLR in PLR position).</td><td></td></tr>
<tr><td colspan="2">[EG]</td><td colspan="2">[W]</td><td colspan="2">[K]</td><td></td><td></td></tr>
<tr><td colspan="2">UP</td><td colspan="2">UP</td><td colspan="2">UP</td><td>Idle on CGA.</td><td>CGA Screw-Down Options</td></tr>
<tr><td colspan="2">UP</td><td colspan="2">UP</td><td colspan="2">DN</td><td>Busy on CGA.</td><td></td></tr>
<tr><td colspan="2">DN</td><td colspan="2">UP</td><td colspan="2">UP</td><td>Idle on CGA, busy after 2.5 or 10 seconds (optional) delay.</td><td></td></tr>
<tr><td colspan="2">UP</td><td colspan="2">DN</td><td colspan="2">UP</td><td>Busy on CGA with 70 ms wink open after 2.5 or 10 seconds (optional) delay. After wink, remains busy until CGA is cleared.</td><td></td></tr>
<tr><td colspan="6">[BF]**</td><td>Busies far end (only when BSY switch is operated).</td><td>BSY Switch Options (0-ohm Resistor Strap)</td></tr>
<tr><td colspan="6">[BN]**</td><td>Busies near end (busies E lead and grounds OS lead) only when BSY switch is operated.</td><td></td></tr>
</table>

*Option is factory selected.
**Removal of strap inhibits function when BSY switch is selected (UP).

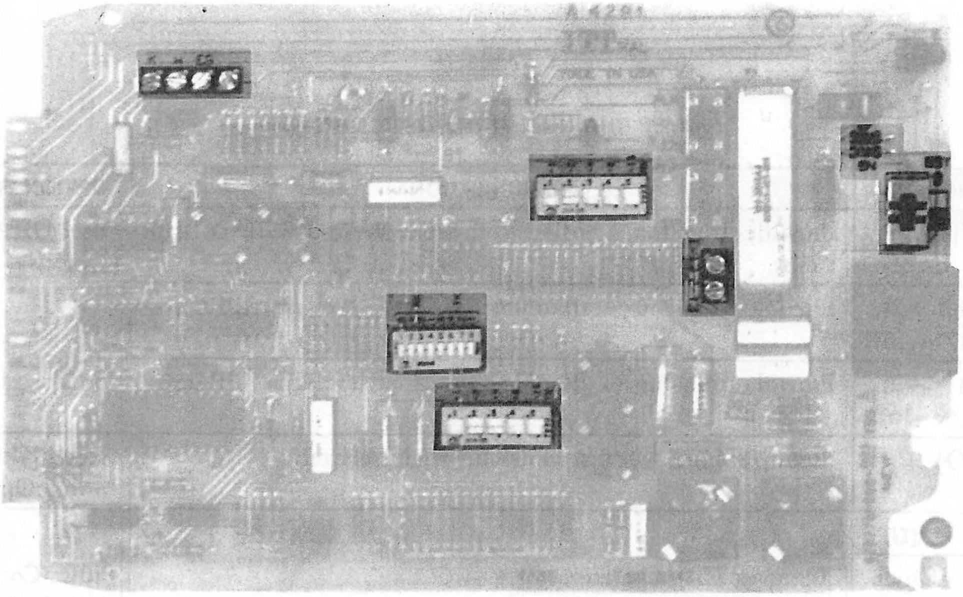


Fig. 12—4WEVF Channel Unit, 628270, Option Locations

TABLE N

4WSF CHANNEL UNIT, 628275, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in 0.1-dB steps.	Level DIP Switch Options
[TX] +1,* +2, +4,* +8,* +16*		Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1,* −2, −4, −8,* −16*		Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[NO]		Removes notch-filter from circuit when selected.	Notch-Filter DIP Switch Option
[TO]	**[TI]**		Pulse Corrector DIP Switch Options
Select	Open	Removes TX pulse corrector.	
Open	Select*	Inserts TX pulse corrector.	
[RO]	**[RI]**		
Select	Open	Removes RX pulse corrector.	
Open	Select*	Inserts RX pulse corrector.	
[FB]	**[FI]**		FMA DIP Switch Options
Select*	Open	Busies far end when FMA is received (or when BSY switch is operated and option [BF] selected).	
Open	Select	Idles far end when FMA is received (or when BSY switch is operated and option [BF] selected).	
[BF]*		Busies or idles far end (depending on [FB]/[FI] option) only when BSY switch is operated.	BSY Switch DIP Switch Option
[BN]*		Busies near end (removes SF tone from drop) only when BSY switch is operated.	
[OR]		Idle on CGA with busy after 2.5 or 10 second (optional) delay.	CGA DIP Switch Option

*Option is factory selected.

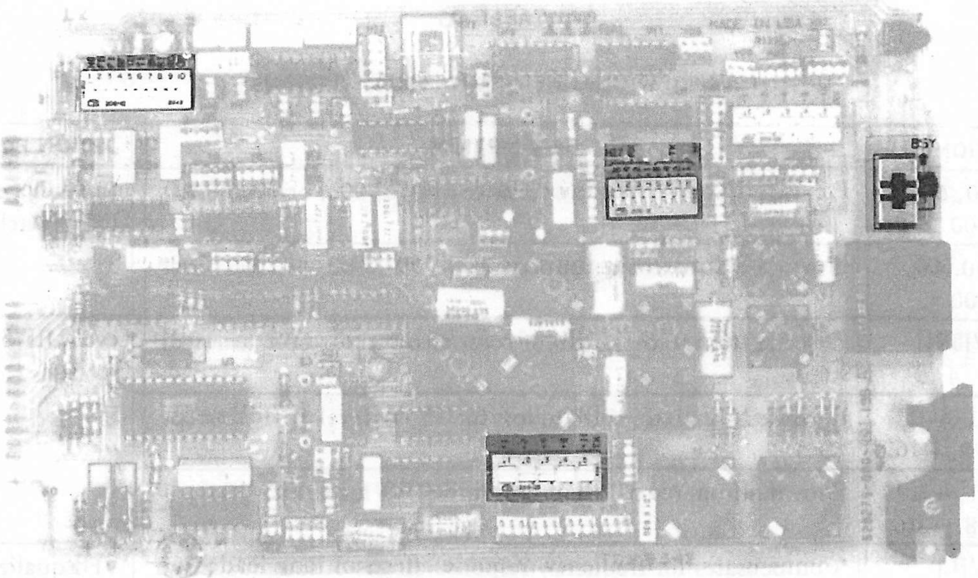


Fig. 13—4WSF Channel Unit, 628275, Option Locations

TABLE O

4WDX/VF CHANNEL UNIT, 628280, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[TX] 150, 600,* 1200		Provides TX matching impedance of 150, 600, or 1200 ohms.	Impedance Matching DIP Switch Options
[RX], 150, 600,* 1200		Provides RX matching impedance of 150, 600, or 1200 ohms.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8, +16		Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8, −16		Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[N]/[L]		Compensates for frequency response effects of long loaded or nonloaded lines — see Appendix A.	VF Equalizer DIP Switch Options
[SL]† 1, 2, 4, 8			
[HT]† 1, 2, 4, 8			
[BW]† 1, 2, 4, 8			
[NOR]	**[REV]**		
Select*	Open	Provides for normal operation.	Normal/Reverse TSX/RSX Slide Switch Options
Open	Select	Provides for reverse operation (reverses TSX and RSX leads for back-to-back operation).	
[A], [B]		Adds 1 uF to balance capacity when either option is selected; adds 2 uF to balance capacity when both options are selected.	Capacitive Balance DIP Switch Options
[250], [500], [1K], [2K], [3K]		Allows selection of resistive balance matching in 250-ohm steps from 0 to 5 k ohms.	Resistive Balance DIP Switch Options
[BN]**		Busies near end (only when BSY switch is selected).	BSY Switch Option (0-ohm Resistor Strap)
[EG]	**[K]**		
UP	UP	Idle on CGA.	CGA Screw-Down Options
UP	DN	Busy on CGA.	
DN	UP	Idle on CGA, busy after 2.5 or 10 second (optional) delay.	

*Option is factory selected.
**Removal of strap inhibits function when BSY switch is selected (UP).
†[SL] = Slope; [HT] = Height; [BW] = Bandwidth.

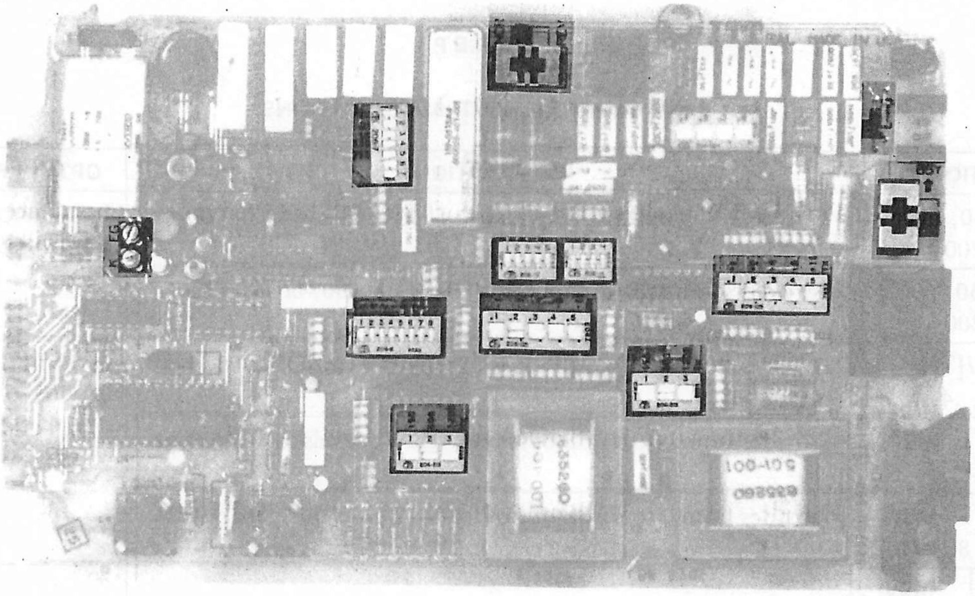


Fig. 14—4WDX/VF Channel Unit, 628280, Option Locations

TABLE P

4WDX CHANNEL UNIT, 628285, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[TX] 150, 600,* 1200		Provides TX matching impedance of 150, 600, or 1200 ohms.	Impedance Matching DIP Switch Options
[RX], 150, 600,* 1200		Provides RX matching impedance of 150, 600, or 1200 ohms.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8, +16		Provides from 0 to 31 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8, −16		Provides from 0 to 31 dB of loss for RX VF levels in 1-dB steps.	
[NOR]	**[REV]**		Normal/Reverse TSX/RSX Slide Switch Options
Select*	Open	Provides for normal operation.	
Open	Select	Provides for reverse operation (reverses TSX and RSX leads for back-to-back operation).	
[A], [B]		Adds 1 uF to balance capacity when either option is selected; adds 2 uF to balance capacity when both options are selected.	Capacitive Balance DIP Switch Options
[250], [500], [1K], [2K], [3K]		Allows selection of resistive balance matching in 250-ohm steps from 0 to 5 k ohms.	Resistive Balance DIP Switch Options
[BN]**		Busies near end (only when BSY switch is selected).	BSY Switch Option (0-ohm Resistor Strap)
[EG]	**[K]**		CGA Screw-Down Options
UP	UP	Idle on CGA.	
UP	DN	Busy on CGA.	
DN	UP	Idle on CGA, busy after 2.5 or 10 second (optional) delay.	

*Option is factory selected.

**Removal of strap inhibits function when BSY switch is selected (UP).

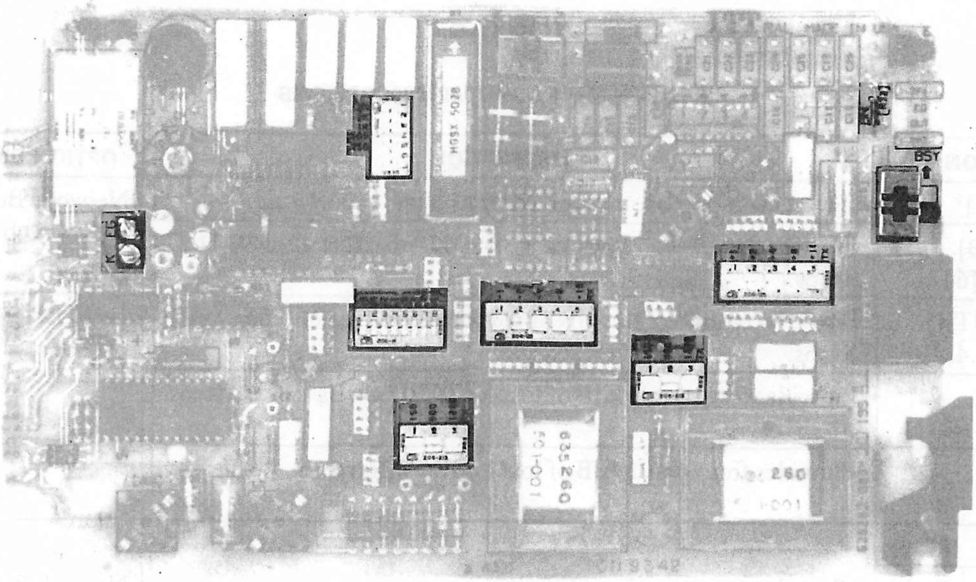


Fig. 15—4WDX Channel Unit, 628285, Option Locations

TABLE Q

2WDX CHANNEL UNIT, 628290, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[CN]*		Selects compromise network of 900 ohms + 2.16 uF.	Network Build-Out DIP Switch Options
[2], [4], [8], [16], [32], [64]		Provides build-out capacitance of .002 to .126 uF in .002 uF steps.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1-dB steps.	Level DIP Switch Options
[TX] +1, +2,* +4,* +8		Provides from 0 to 15 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8		Provides from 0 to 15 dB of loss for RX VF levels in 1-dB steps.	
[NOR]	**[REV]**		
Select*	Open	Provides for normal operation.	Normal/Reverse TSX/RSX Slide Switch Options
Open	Select	Provides for reverse operation (reverses TSX and RSX leads for back-to-back operation).	
[A], [B]		Adds 1 uF to balance capacity when either option is selected; adds 2 uF to balance capacity when both options are selected.	Capacitive Balance DIP Switch Options
[250], [500], [1K], [2K], [3K]		Allows selection of resistive balance matching in 250-ohm steps from 0 to 5 k ohms.	Resistive Balance DIP Switch Options
[BN]**		Busies near end (only when BSY switch is selected).	BSY Switch Option (0-ohm Resistor Strap)
[EG]	**[K]**		
UP	UP	Idle on CGA.	CGA Screw-Down Options
UP	DN	Busy on CGA.	
DN	UP	Idle on CGA, busy after 2.5 or 10 second (optional) delay.	

*Option is factory selected.

**Removal of strap inhibits function when BSY switch is selected (UP).

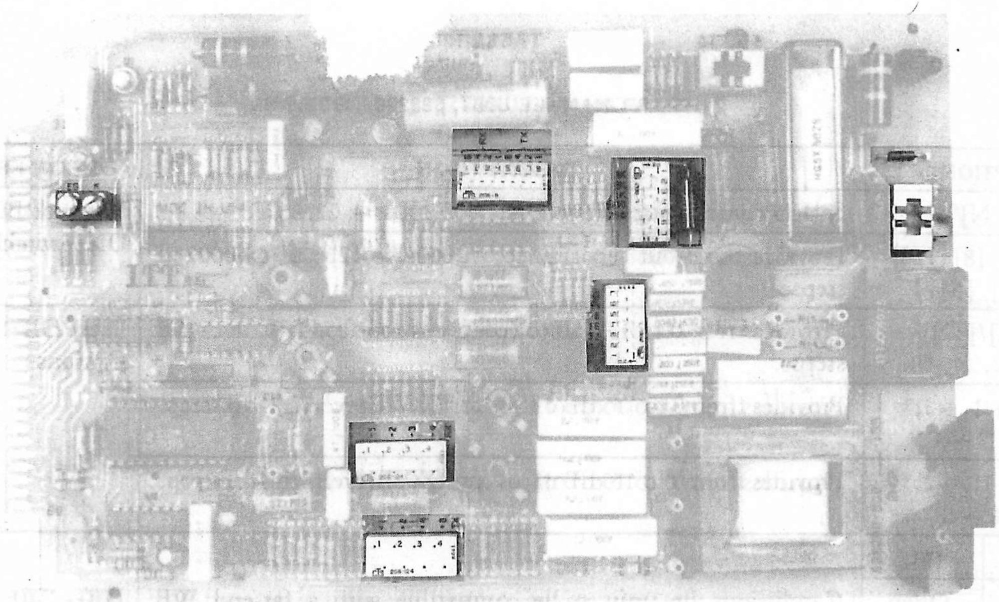


Fig. 16—2WDX Channel Unit, 628290, Option Locations

TABLE R

2WPLAR CHANNEL UNIT, 628295, OPTIONS

OPTION		DESCRIPTION	OPTION FUNCTION
[CN]*		Selects compromise network of 900 ohms + 2.16 uF.	Network Build-Out DIP Switch Options
[2], [4], [8], [16], [32], [64]		Provides build-out capacitance of .002 to .126 uF in .002 uF steps.	
[RX]/[TX] .1, .2, .4, .8		Provides from 0 to 1.5 dB of compensation for OWL in .1 dB steps.	Level DIP Switch — Options
[TX] +1, +2,* +4,* +8		Provides from 0 to 15 dB of loss for TX VF levels in 1-dB steps.	
[RX] −1, −2,* −4, −8		Provides from 0 to 15 dB of loss for RX VF levels in 1-dB steps.	
[A]	**[B]**		ITT-, WE-Compatible Switch Option
Select*	Open	Conditions the unit to be compatible with a far-end WE 2WPLAR.	
Open	Select	Conditions the unit to be compatible with a far-end ITT 2WPLAR.	

*Option is factory selected.

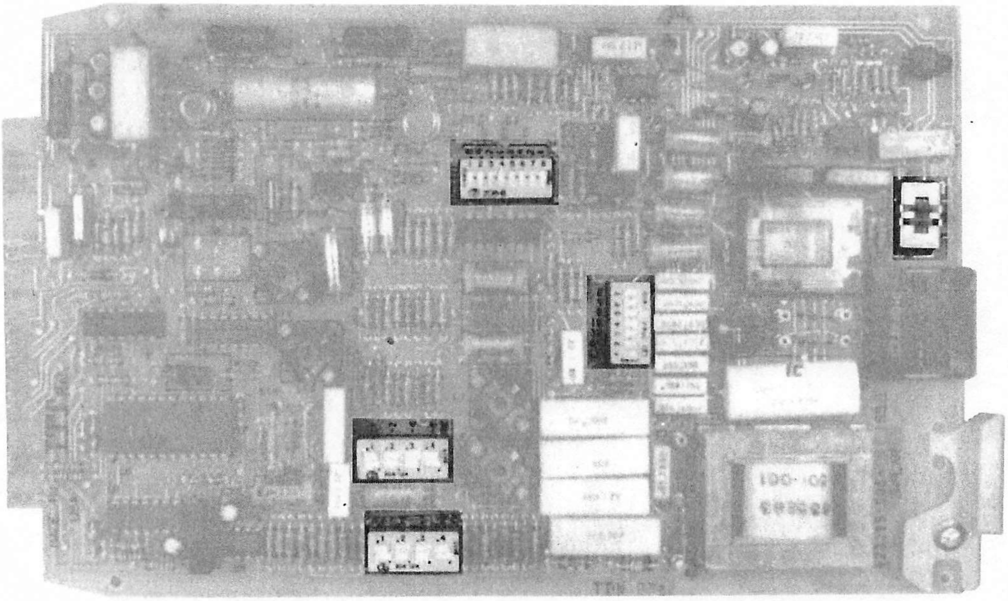


Fig. 17—2WPLAR Channel Unit, 628295, Option Locations

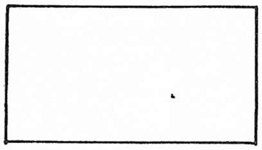
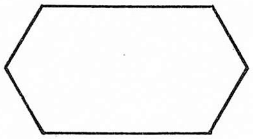
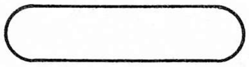
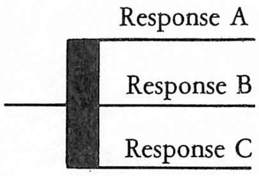
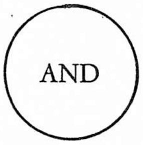
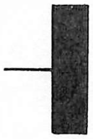
CHANNEL UNIT EQUALIZER ADJUSTMENT

APPENDIX A

TO

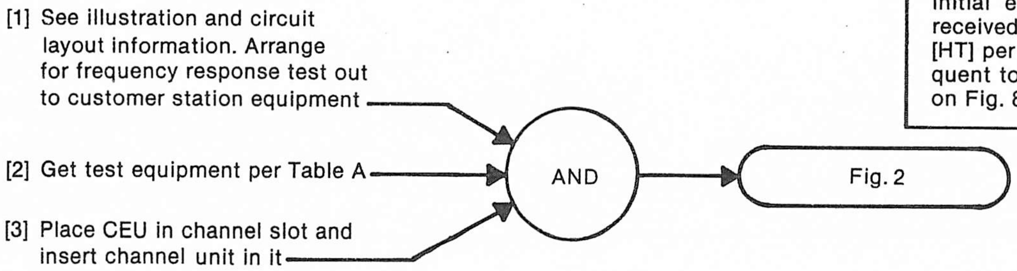
SECTION ITTR-18-441

SYMBOL DESCRIPTIONS

SYMBOL	NAME	DESCRIPTION
	Instruction Block	An instruction block is used to enclose a discrete statement. Each block has a reference number in brackets [ ]. This is for reference only and does not imply sequence.
	Decision Block	A decision block is used to enclose an interrogative statement. Each block has a reference number in brackets [ ]. This is for reference only and does not imply sequence. Each block normally has two responses (Yes-No); however, multiple responses are possible. For example, two "Yes" responses will be numbered Yes (1) and Yes (2). Always try the (1) response first. If the problem is not corrected, repeat the procedure with the (2) response.
	Reference Bubble	A reference bubble is used at the termination of a flowline to represent an exit from that figure or subfigure.
	Exclusive OR Operation	The Exclusive OR operation symbol is used when the user must select one of several responses. One, and only one, of the responses will occur at a given time.
	AND Operation	The AND operation symbol is a junction point within a procedure. It indicates that each input (instruction) must be performed in the order given to accomplish the output.
	End-of-Procedure	The end-of-procedure symbol is used to denote that the flow-charted procedure, as defined by the procedure title, has been completed.

SUMMARY

With tester at customer end (see illustration), arrange for frequency response test. Connect transmission measuring set (TMS) to channel drop. Adjust TMS oscillator for 0 dBm0 but test only one direction at a time. For initial equalization, find N/L setting (Fig. 3), select [SL] option using received 400 and 1000 Hz, then, starting with values of 4, select [BW] and [HT] per Table C on Fig. 8 and illustration on Fig. 7. Readjust. For subsequent touchup, make readjustments per illustration on Fig. 7 and Table C on Fig. 8.



[1] See illustration and circuit layout information. Arrange for frequency response test out to customer station equipment

[2] Get test equipment per Table A

[3] Place CEU in channel slot and insert channel unit in it

TABLE A

EQUIPMENT REQUIRED	RECOMMENDED TYPE
Transmission Measuring Set (TMS) with Sine Wave Oscillator (0 dBm, 600 ohm, 400 to 3000 Hz)	HP3551A or equivalent
Patch Cord — 310 to tip plug(s)	—
Channel Unit Extender (CEU)	ITT 628460-0

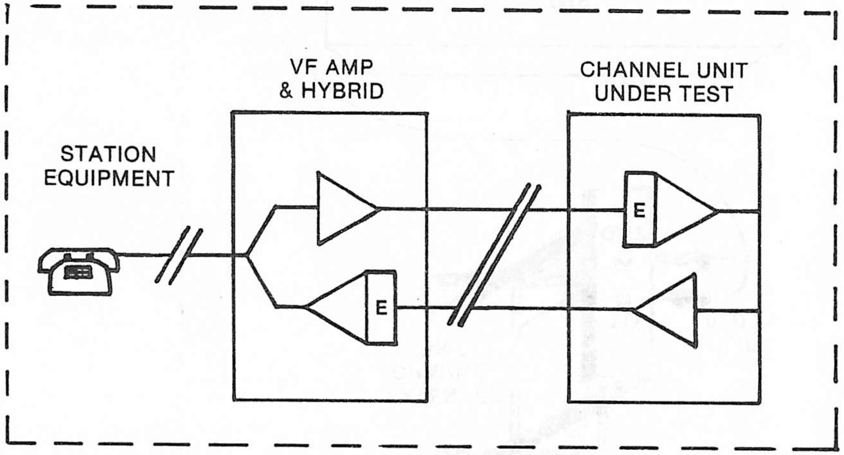
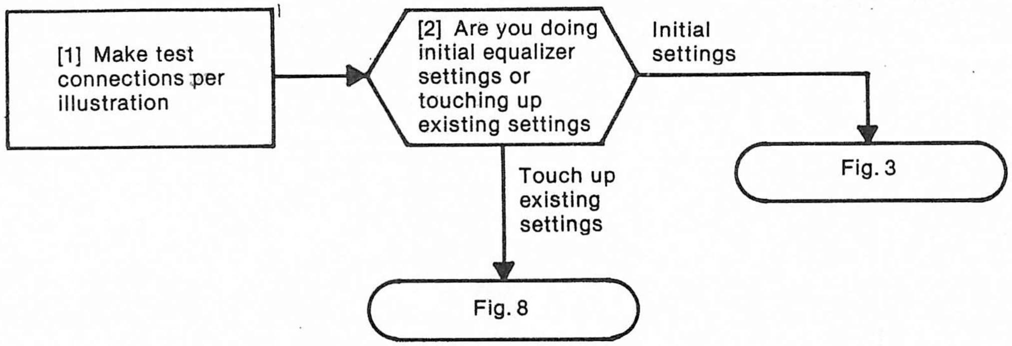


Fig. 1—Initial Preparation


[1] Make test connections per illustration
[2] Are you doing initial equalizer settings or touching up existing settings
Initial settings
Fig. 3
Touch up existing settings
Fig. 8

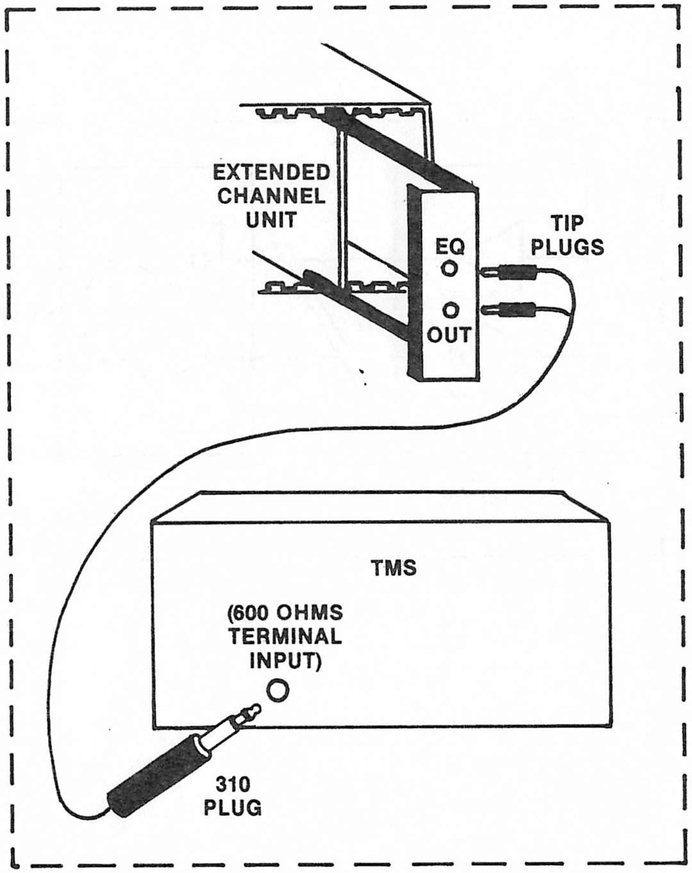
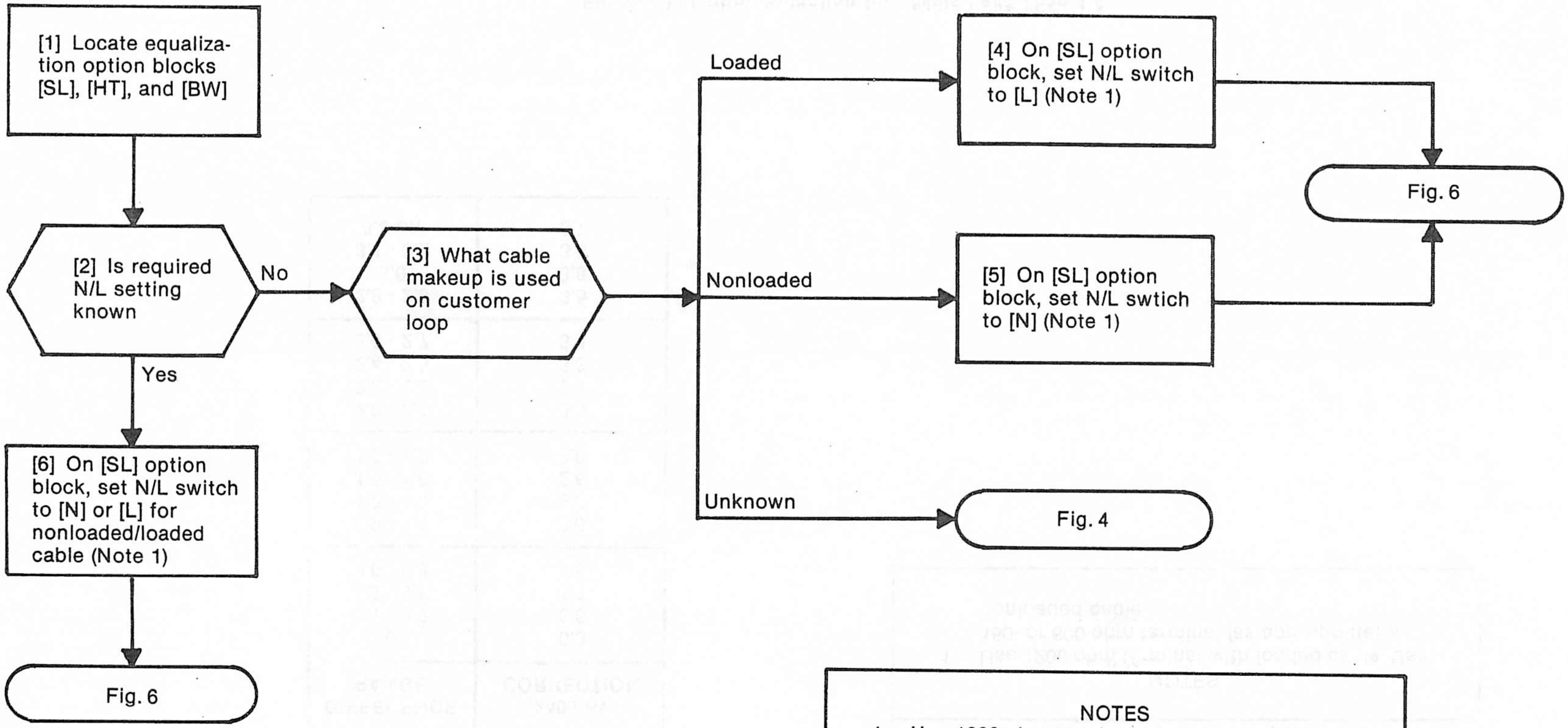

EXTENDED CHANNEL UNIT
EQ
OUT
TIP PLUGS
TMS
(600 OHMS TERMINAL INPUT)
310 PLUG

Fig. 2—Test Setup


[1] Locate equalization option blocks [SL], [HT], and [BW]
[2] Is required N/L setting known
No
Yes
[3] What cable makeup is used on customer loop
Loaded
Nonloaded
Unknown
[4] On [SL] option block, set N/L switch to [L] (Note 1)
[5] On [SL] option block, set N/L swtich to [N] (Note 1)
[6] On [SL] option block, set N/L switch to [N] or [L] for nonloaded/loaded cable (Note 1)
Fig. 6
Fig. 4
Fig. 6

NOTES

1. Use 1200-ohm terminal with loaded cable; use 150- or 600-ohm terminal (as appropriate) with nonloaded cable.

Fig. 3—[N]/[L] Option Selection for Known Cable Make Up

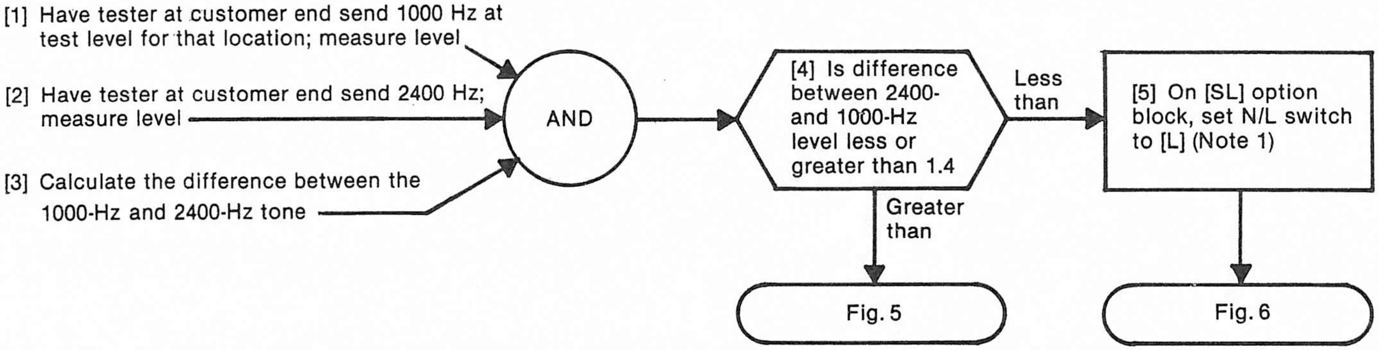

[1] Have tester at customer end send 1000 Hz at test level for that location; measure level
[2] Have tester at customer end send 2400 Hz; measure level
[3] Calculate the difference between the 1000-Hz and 2400-Hz tone
AND
[4] Is difference between 2400- and 1000-Hz level less or greater than 1.4
Less than
[5] On [SL] option block, set N/L switch to [L] (Note 1)
Greater than
Fig. 5
Fig. 6

TABLE B

DIFFERENCE RANGE	2400-Hz CORRECTION
0	0.0
0.1 - 0.2	0.6
0.3 - 0.5	1.2
0.6 - 0.8	1.6
0.9 - 1.1	2.0
1.2 - 1.4	2.3
1.5 - 1.6	2.6
1.7 - 1.9	2.8
2.0 - 2.1	3.0
2.2 - 2.3	3.1
2.4 - 2.5	3.3
2.6 - 2.7	3.4
2.8 - 2.9	3.5
3.0	3.6
3.1 - 3.2	3.6
3.3 on	3.7

NOTES

1. Use 1200-ohm terminal with loaded cable. Use 150- or 600-ohm terminal (as appropriate) with nonloaded cable.

Fig. 4—[L] Option Selection for Levels Less Than 1.4

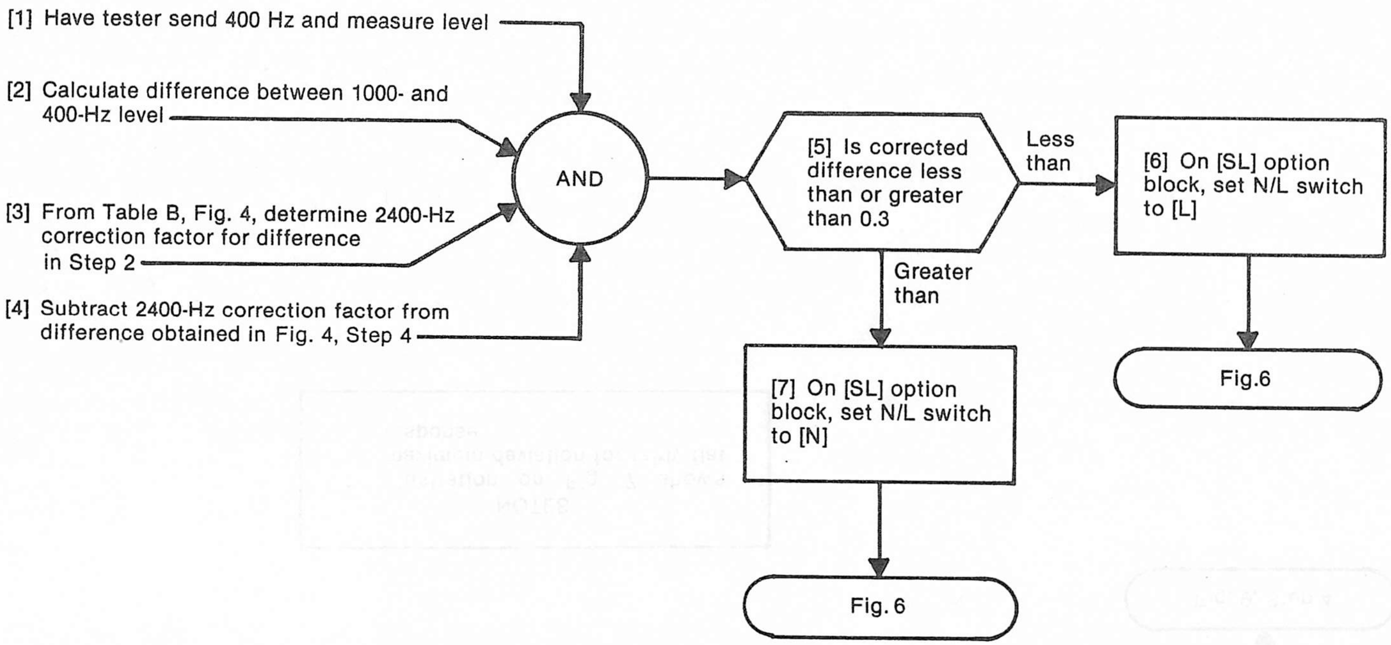
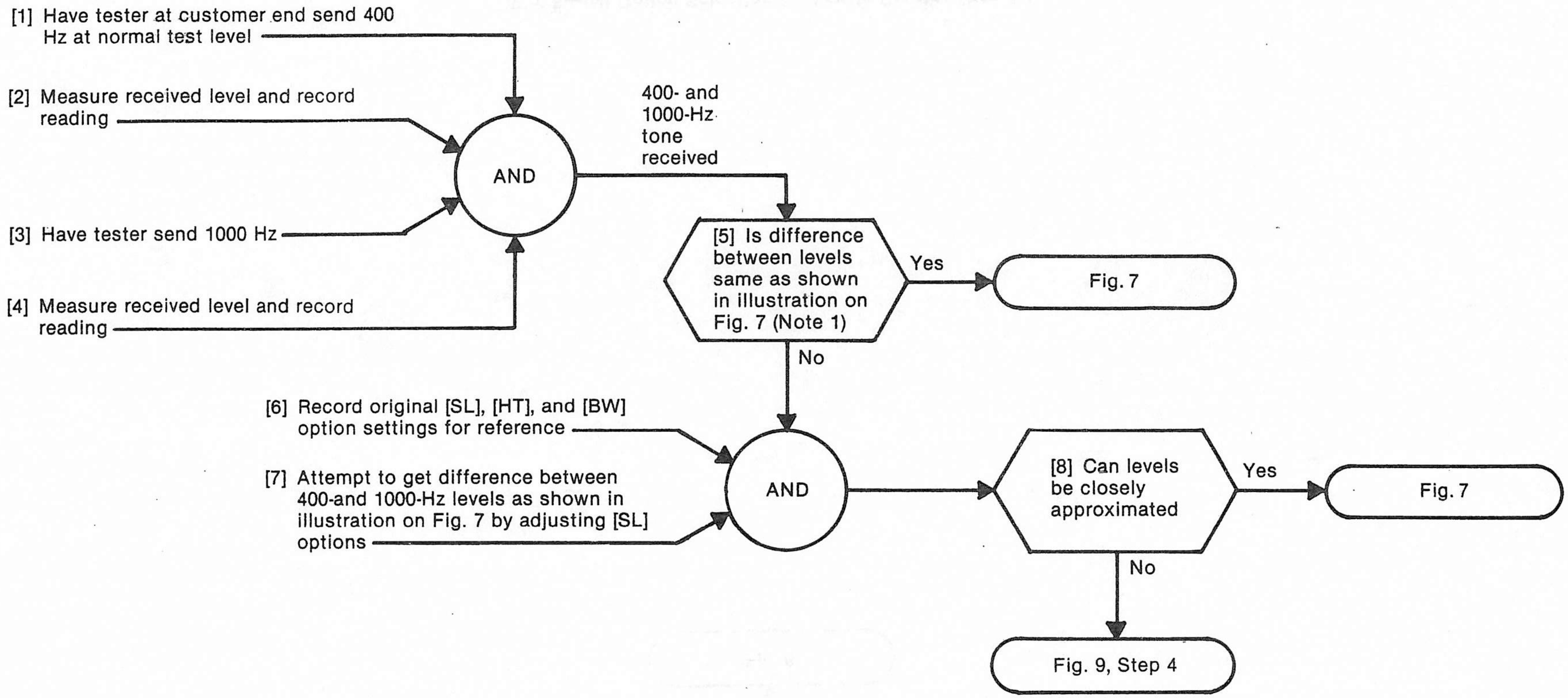

[1] Have tester send 400 Hz and measure level
[2] Calculate difference between 1000- and 400-Hz level
[3] From Table B, Fig. 4, determine 2400-Hz correction factor for difference in Step 2
[4] Subtract 2400-Hz correction factor from difference obtained in Fig. 4, Step 4
AND
[5] Is corrected difference less than or greater than 0.3
Less than
[6] On [SL] option block, set N/L switch to [L]
Fig.6
Greater than
[7] On [SL] option block, set N/L switch to [N]
Fig. 6

Fig. 5—[N] Option Selection for Levels Greater Than 1.4


[1] Have tester at customer end send 400 Hz at normal test level
[2] Measure received level and record reading
[3] Have tester send 1000 Hz
[4] Measure received level and record reading
AND
400- and 1000-Hz tone received
[5] Is difference between levels same as shown in illustration on Fig. 7 (Note 1)
Yes
Fig. 7
No
[6] Record original [SL], [HT], and [BW] option settings for reference
[7] Attempt to get difference between 400-and 1000-Hz levels as shown in illustration on Fig. 7 by adjusting [SL] options
AND
[8] Can levels be closely approximated
Yes
Fig. 7
No
Fig. 9, Step 4

NOTES

1. Illustration on Fig. 7 shows maximum deviation for fairly flat response.

Fig. 6—[SL] Option, Course Adjustment

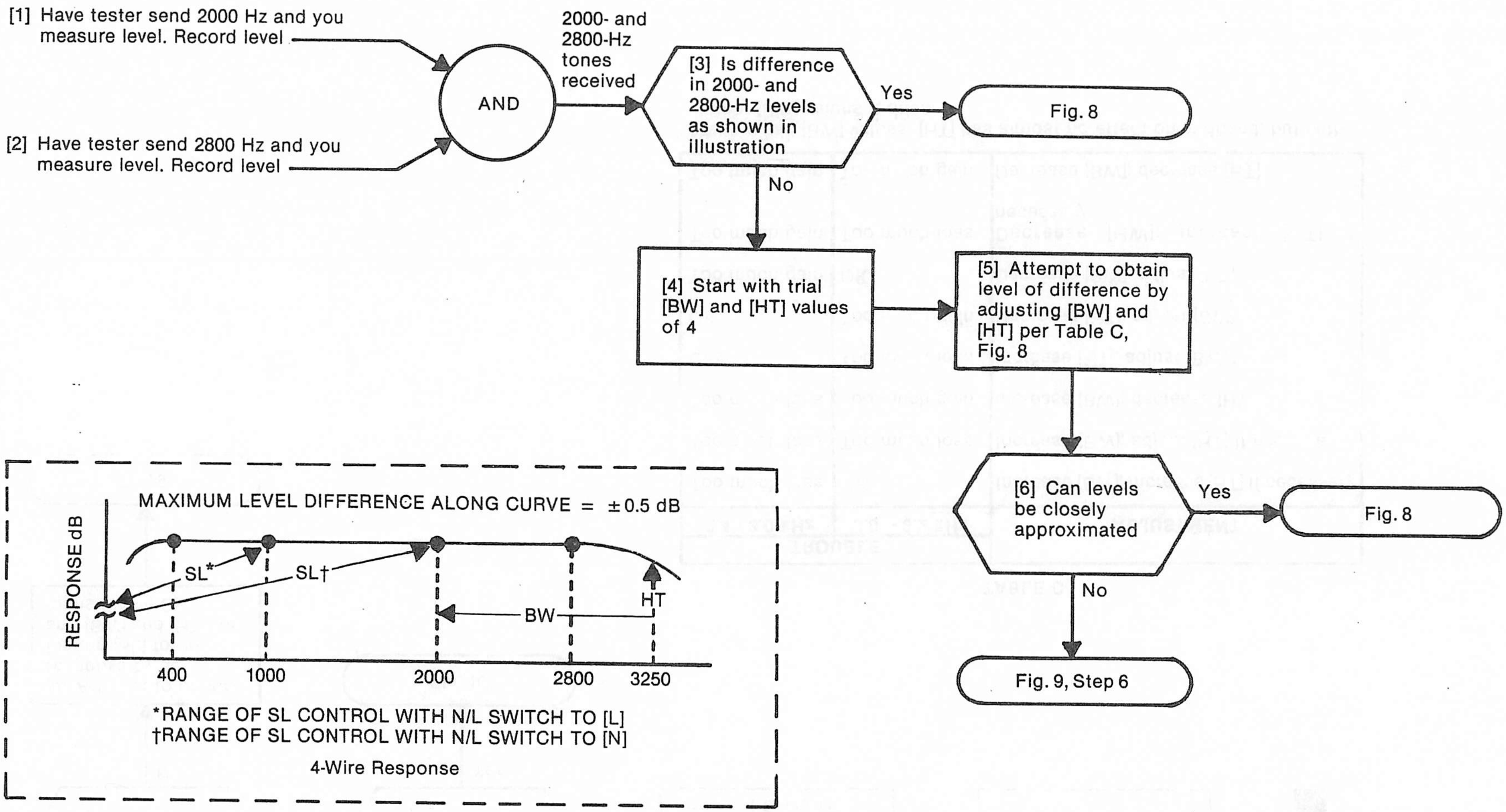

[1] Have tester send 2000 Hz and you measure level. Record level
[2] Have tester send 2800 Hz and you measure level. Record level
AND
2000- and 2800-Hz tones received
[3] Is difference in 2000- and 2800-Hz levels as shown in illustration
Yes
Fig. 8
No
[4] Start with trial [BW] and [HT] values of 4
[5] Attempt to obtain level of difference by adjusting [BW] and [HT] per Table C, Fig. 8
[6] Can levels be closely approximated
Yes
Fig. 8
No
Fig. 9, Step 6
MAXIMUM LEVEL DIFFERENCE ALONG CURVE = ±0.5 dB
RESPONSE dB
SL*
SL†
BW
HT
400
1000
2000
2800
3250
*RANGE OF SL CONTROL WITH N/L SWITCH TO [L]
†RANGE OF SL CONTROL WITH N/L SWITCH TO [N]
4-Wire Response

Fig. 7—[BW] and [HT] Options, Course Adjustment

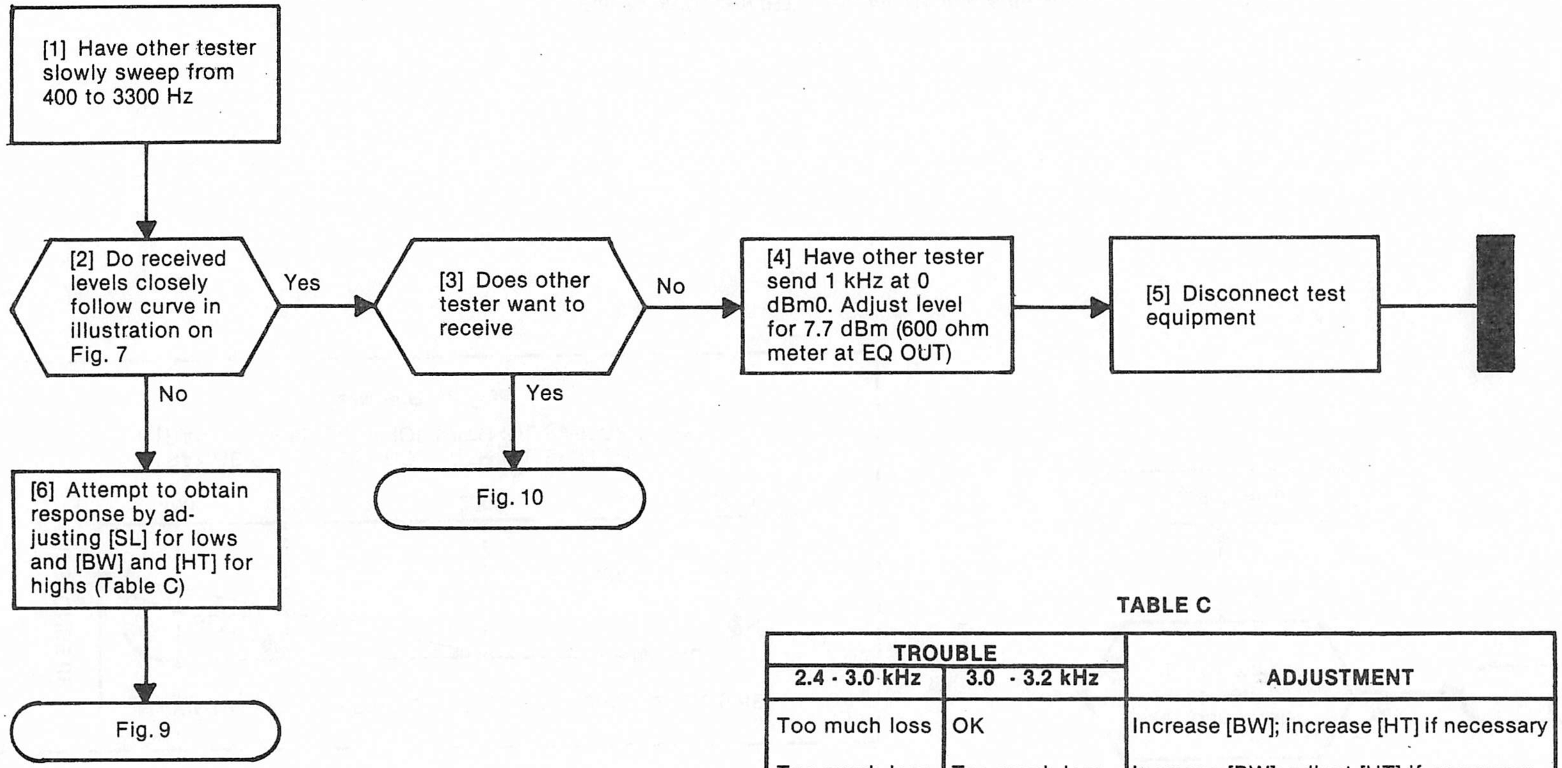

[1] Have other tester slowly sweep from 400 to 3300 Hz
[2] Do received levels closely follow curve in illustration on Fig. 7
Yes
No
[3] Does other tester want to receive
No
Yes
[4] Have other tester send 1 kHz at 0 dBm0. Adjust level for 7.7 dBm (600 ohm meter at EQ OUT)
[5] Disconnect test equipment
[6] Attempt to obtain response by adjusting [SL] for lows and [BW] and [HT] for highs (Table C)
Fig. 9
Fig. 10

TABLE C

TROUBLE		ADJUSTMENT
2.4 - 3.0 kHz	3.0 - 3.2 kHz	
Too much loss	OK	Increase [BW]; increase [HT] if necessary
Too much loss	Too much loss	Increase [BW]; adjust [HT] if necessary
Too much loss	Too much gain	Increase [BW]; decrease [HT]
OK	Too much loss	Increase [HT]; adjust [BW]*
OK	Too much gain	Decrease [HT]; adjust [BW]
Too much gain	OK	Decrease [BW]; adjust [HT]
Too much gain	Too much loss	Decrease [HW]; increase [HT] if necessary
Too much gain	Too much gain	Decrease [BW]; decrease [HT]

*With small [BW] values, [HT] has almost no effect on midband, but with larger [BW] values it does

Fig. 8—Final Check

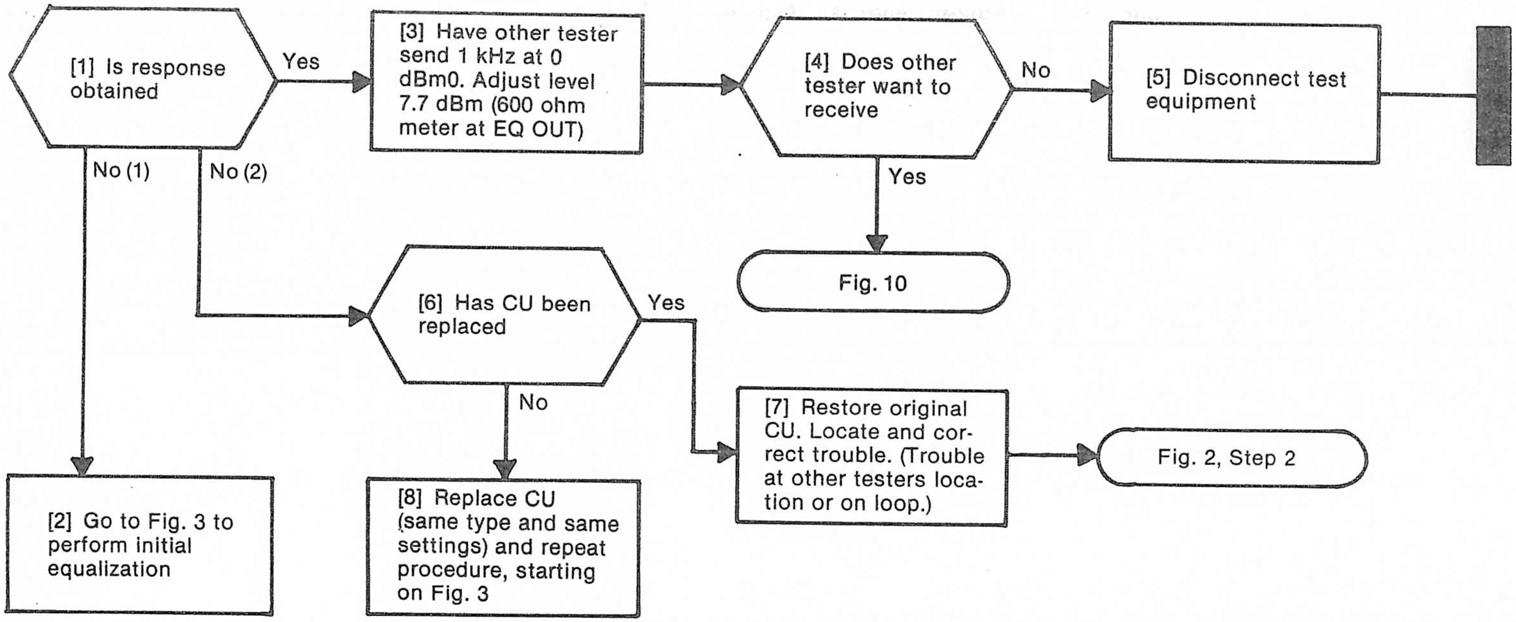

[1] Is response obtained
Yes
No (1)
No (2)
[2] Go to Fig. 3 to perform initial equalization
[3] Have other tester send 1 kHz at 0 dBm0. Adjust level 7.7 dBm (600 ohm meter at EQ OUT)
[4] Does other tester want to receive
No
Yes
[5] Disconnect test equipment
Fig. 10
[6] Has CU been replaced
Yes
No
[7] Restore original CU. Locate and correct trouble. (Trouble at other testers location or on loop.)
Fig. 2, Step 2
[8] Replace CU (same type and same settings) and repeat procedure, starting on Fig. 3

Fig. 9—Channel Unit Trouble Clearing

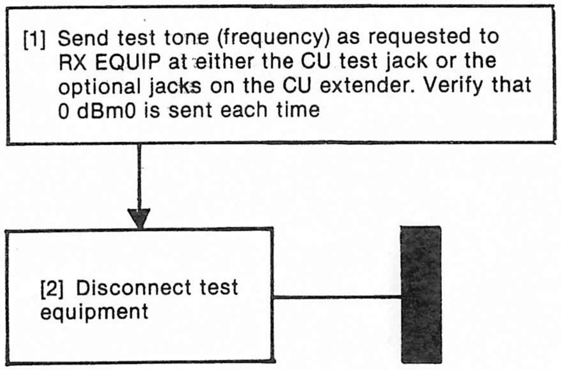

[1] Send test tone (frequency) as requested to RX EQUIP at either the CU test jack or the optional jacks on the CU extender. Verify that 0 dBm0 is sent each time
[2] Disconnect test equipment

Fig. 10—Sending Test Tone Toward Customer Loop